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Levels of Awareness / Non-Awareness on the Incidences of Breast Cancer Among Patients Attending Oncology Clinic at the National Hospital Abuja FCT, Nigeria

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KEYWORDS

Cancer, breast, population, Nigeria

ABSTRACT:

Introduction: Screening for breast cancer was conducted among patients attending Histology and Oncology departments at the National Hospital Abuja Nigeria. Our aim principally was to determine the incidence of breast cancer among female patients aged forty years and above. At least to gain a fair insight into breast cancer cases responding positively to clinical interventions in terms of Chemotherapeutics.

Methods: Study design- This is a longitudinal and prospective study in which breast samples were collected and processed from a cohort of female patients aged forty years and above attending histology and oncology departments at the National Hospital Abuja FCT.

Results: Histologically processed Breast samples that were cancerous far outnumbered those that were not cancerous among the female patients aged 40 years and above attending oncology clinic at the National Hospital Abuja, Nigeria. ($P< 0.05$). Likewise Level of non awareness of knowledge on breast cancer is significantly higher than awareness level among patients attending oncology clinics at 95% confidence limits. ($P< 0.05$)

Conclusion: This clearly showed that Breast cancer incidence cases among female attendee oncology patients aged 40 years and above is on alarming and geometric increase. Although the work is limited by the fact that it was hospital based research! Despite the unavoidable bias the study corroborated other qualitative global breast cancer reports from other studies examined. (1,2,3, 7 refs.e.t.c). The fact remains that the global increase in breast cancer cases and the unaffordable cost of medication and treatment are becoming very worrisome!!. lack of some core basic knowledge of the disease among the affected patients needs to be reversed.

1. Introduction

The human breasts are paired mammary glands located on the anterior aspect of the thorax. They are more prominent in females after puberty and only rudimentary in males. The adult female breast (the 'breast' hereafter) has a broad base that overlies the 2nd to 6th ribs [1]. Breast cancer ranks second globally in terms of cancer-related deaths among women and is the most prevalent cancer diagnosed in women [2]. The Global Cancer Observatory (GLOBOCAN) project resource, which is frequently used to estimate cancer mortality and incidence worldwide, typically has inadequate quality and quantity of data from low- and middle-income countries (LIC and MIC) [3]. In contrast to wealthy nations, the incidence and mortality rates of breast cancer are increasing in SSA [4]. The fact that the age-standardized death rate in Africa was the highest in the world, despite the fact that the incidence was relatively lower than in other continents (except from Asia), is concerning. The highest death rate is found in Nigeria, the most populous country in Africa [5]. The disease not only poses a significant obstacle to extending life expectancy, but it also has significant societal and macroeconomic expenses that differ depending on the type of disease, location, and gender [6]. Early detection is an important component of a comprehensive breast

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cancer care strategy. Planning cancer control initiatives and tracking screening and early detection programs depend heavily on population-based statistics on cancer stage [7]. In this study, we focused on a year distributions and incidence trends of breast cancer given their high contributions to cancer burden and frequent inadequate screening practices and interventions particularly in Nigeria. The yearly incidence of breast cancer is still very high. The Nigerian government has made admirable attempts to reduce the incidence of breast cancer, but these efforts are frequently undermined by the ministries that oversee the delivery of chemotherapy to those who suffer from this terrible illness [8]- Cancer according to the popular adage -"*has no face until either a person or somebody very close to him /her falls a victim"* We looked at the level of awareness of knowledge about breast cancer among oncology clinic attendees at the National hospital Abuja. This was observed to be very low. We also compared the breast cancer cases among these group of patients and those that were free of breast cancer. Again the number of those having cancer was very high when compared with those that had no cancer. Advancing the quality of cancer registry data and strengthening the role of such data in cancer control will be critical for planning, monitoring, and evaluating progress.

The aim of this study was to analyse stage-specific distributions and changes over time in breast cancer and cervical cancer incidence among patients attending oncology and histology departments at the National Hospital, Abuja in Nigeria.

2. Literature Review

Breast Cancer Incidence / Awareness in Nigeria

Breast cancer incidence is on the rise in Nigeria, making it the most common cancer among women, accounting for an estimated 22.7% of all new cancer cases in 2020 [9]. One of Africa's highest rates of breast cancer death is in Nigeria, where the age-standardized rate is roughly 54.3 per 100,000 women [5]. Delays in diagnosis, inadequate access to care, and a higher incidence of hormone-receptor negative breast tumors, which restrict treatment options, all contribute to these high rates [10]. In Nigeria, breast cancer is currently the most prevalent cancer among women. In Nigeria, breast cancer is currently the most prevalent cancer among women. In the coming millennium, it is probably going to become a significant public health concern. Nigerian women with breast cancer have a poor overall survival rate, and those who get the disease early typically live longer than those who get it later [11]. Young, pre-menopausal women with advanced breast cancer often make up the majority of breast cancer patients in Nigeria. But information about the disease's fundamental sciences, like as its pathophysiology and genetic foundation, has exploded in recent years. The prognosis is improving as a result of these modifications to the disease's care [12]. Over 70,000 people in Nigeria lose their lives to cancer each year (28,414 men and 41,913 women). The five most prevalent cancers have the following estimated incidences: non-Hodgkin lymphoma (5.3%), liver (5.0), prostate (12.8%), cervical uterus (14.6%), and breast cancer (25.7%). Breast cancer (18.6%), non-Hodgkin lymphoma (6.0%), prostate (9.4%), liver (8.3%), and cervical uterus (16.8%) have the highest expected fatality proportions. In Nigeria, breast cancer is now the most deadly type of cancer, followed by cervical cancer and prostate cancer [13]. The burden of breast cancer in Nigeria is increased by a lack of early diagnosis and, consequently, early detection. Mammography, a type of breast X-ray, can identify changes or growth in the breast that are still too small for even an expert to feel with their hands [13]. False negative results are another issue with mammograms. False negative rate estimates are based on years of meticulous patient follow-up. In practice, this is challenging, especially in Nigeria, because a large number of women do not return for routine mammograms, making it impossible to determine whether they have ever acquired cancer. One in four cases of cancer in women between the ages of 40 and 49 are missed during each mammogram [13]. Any breast cancer that does not exhibit the genes for the estrogen receptor (ER), progesterone receptor (PR), or Her2/neu is referred to as triple negative breast cancer (TNBC). Breast cancer is divided into four categories using immunohistochemistry (IHC) according to the IHC profile of human epidermal growth factor receptor 2 (HER2/neu) expression and the estrogen receptor (ER)/progesterone receptor (PR), which can be positive (+) or negative (-) [14]. There is a strong correlation between the IHC classification and the intrinsic gene expression microarray classification. Selective ER modulators and aromatase inhibitors may be useful in treating ER-positive cancers, whereas humanized

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monoclonal antibodies against HER2/neu have been demonstrated to significantly increase survival in patients with HER2/neu-positive tumors [15]. Since the majority of chemotherapeutic drugs target one of the three receptors, treating TNBC becomes more challenging.The recurrence pattern of triple negative breast cancers differs significantly from that of hormone-positive breast cancers; during the initial years, the risk of recurrence is significantly higher, but it then falls off significantly [16]. Often exceedingly aggressive, triple negative breast cancer spreads quickly after treatment. Research indicates that the majority of cases of hormone receptor negative breast cancer occur in West African nations. It is well established that aggressive biologic characteristics and a poor clinical prognosis are linked to triple-negative breast cancer (TNBC). Consequently, it is thought that early TNBC detection with low false negatives is essential to improving prognosis [17].

Breast Cancer Survival Rate Depending on State Stage of Diagnosis and Management

Stage of Breast Cancer Survival Rate

Stage 0 100%

Stage I 98%

Stage II 56%

Stage IIIA 49%

Stage IV 16%

Additionally, there is a shortage of equipment for cancer treatment. One of the essential components of treating breast cancer is radiotherapy. Radiation treatment sequences include, for example, surgery followed by radiation and possibly hormonal therapy, chemotherapy followed by targeted or hormonal therapy, surgery followed by radiation and possibly hormonal therapy, and surgery followed by chemotherapy and radiation and possibly hormonal therapy [18]. Many patients in Nigeria are frequently unable to access more advanced technologies utilized in other nations, such as Stereotactic Body Radiotherapy (SBRT), Image Guided Radiotherapy (IGRT), Volumetric Arc Therapy (VMAT), and Intensity Modulated Radiotherapy (IMRT) [19].

3. Methods

Study design: This is a longitudinal and prospective study in which breast biopsy samples were collected at the histopathology laboratory, National Hospital Abuja were also collected from patients aged forty years and above. The samples were processed for HERS 2, ER2 PR, and Triple Negatives hormonal assay receptors (for breast tissue biopsy from a cohort of female patients aged forty years and above attending histology and oncology departments at the National Hospital Abuja FCT.

4. Hypotheses

Hypothesis 1

H_0: There is no significant difference in the incidence of breast cancer among patients attending oncology clinics at the National hospital Abuja and those that were breast cancer free.

H_a: There is significant difference in the incidence of breast cancer among patients attending oncology clinics at the National hospital Abuja and those that were breast cancer free.

Hypothesis 2

H_0: There is no significant difference among oncology clinic attendees that had knowledge awareness in the breast cancer and those that had no knowledge awareness of breast cancer cancer among same group of patients.

H_a: There is significant difference among oncology clinic attendees that had knowledge awareness in the breast cancer and those that had no knowledge awareness of breast cancer cancer among same group of patients.

Table1

Months	Number Of Breast Samples Processed	Number Of Cancerous Breast Samples Confirmed With Either Hers2/Er2/Pr/Triple Negatives	Number Of Non- Cancerous Breast Samples Without Either Hers2/Er2/Pr Nor Triple Negatives
JANUARY	48	24	24

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Months	Number Of Breast Samples Processed	Number Of Cancerous Breast Samples Confirmed With Either Hers2/Er2/Pr/Triple Negatives	Number Of Non- Cancerous Breast Samples Without Either Hers2/Er2/Pr Nor Triple Negatives
FEBRUARY	41	29	12
MARCH	51	29	22
APRIL	40	26	14
MAY	42	28	14
JUNE	33	20	13
JULY	51	29	22
AUGUST	41	25	16
SEPTEMBER	44	24	20
OCTOBER	41	26	25
NOVEMBER	50	29	21
DECEMBER	42	24	18
TOTAL POPULATION EXPOSED	524	315	221
MEAN POPULATION EXPOSED	524/12= 43.7	315/12 = 26.25	221/12 = 18.42
MEAN POPULATION EXPOSED INCIDENCE RATE		= 60.7 PER 100	
VARIANCE		93.33/ n1-1	18.76/n2 -1
COMBINED VARIANCE, SD^2		112.09/24-2 = 112.09 / 22 = 5.09	
SD		√5.09 = 2.25	
SE, STANDARD ERROR	SE =SD√1/12 + 1/12	2.25 X .4 = 0.9	
T TEST, CALCULATED AT 22 DEGREES OF FREEDOM, T	=26.25 -18.42 / 0.9 = 8.7 T-CAL, = 8.7	T CAL - 8.7	
T TEST, TABULATED, AT 22 DEGREES OF FREEDOM, T TAB.	T- TAB = 2.07	T TAB = 2.07	

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Months	Number Of Breast Samples Processed	Number Of Cancerous Breast Samples Confirmed With Either Hers2/Er2/Pr/Triple Negatives	Number Of Non- Cancerous Breast Samples Without Either Hers2/Er2/Pr Nor Triple Negatives
TAB < TCAL OR TCAL > T TAB	T-8.7 > T-2.07, THEREFORE HIGHLY SIGNIFICANT THOSE PATIENTS WITH BREAST CANCER WERE SIGNIFICANTLY HIGHER THAN THOSE WITHOUT BREAST CANCER (P<0.05)		

INCIDENCE RATE = TOTAL NUMBER OF NEW SPELLS /DISEASES X 1000

TOTAL POPULATION EXPOSED

MEAN BREAST CANCER INCIDENCE RATE =26.25 /43.7 X1000 = 600.7 PER 1000

OR 60.7 PER 100 i.e. 60.7% FOR BREAST CANCER

Prove of Hypothesis

Ha: There is significant difference in the incidence of breast cancer and that of Non - Breast cancer among patients attending oncology clinics at the National hospital Abuja.

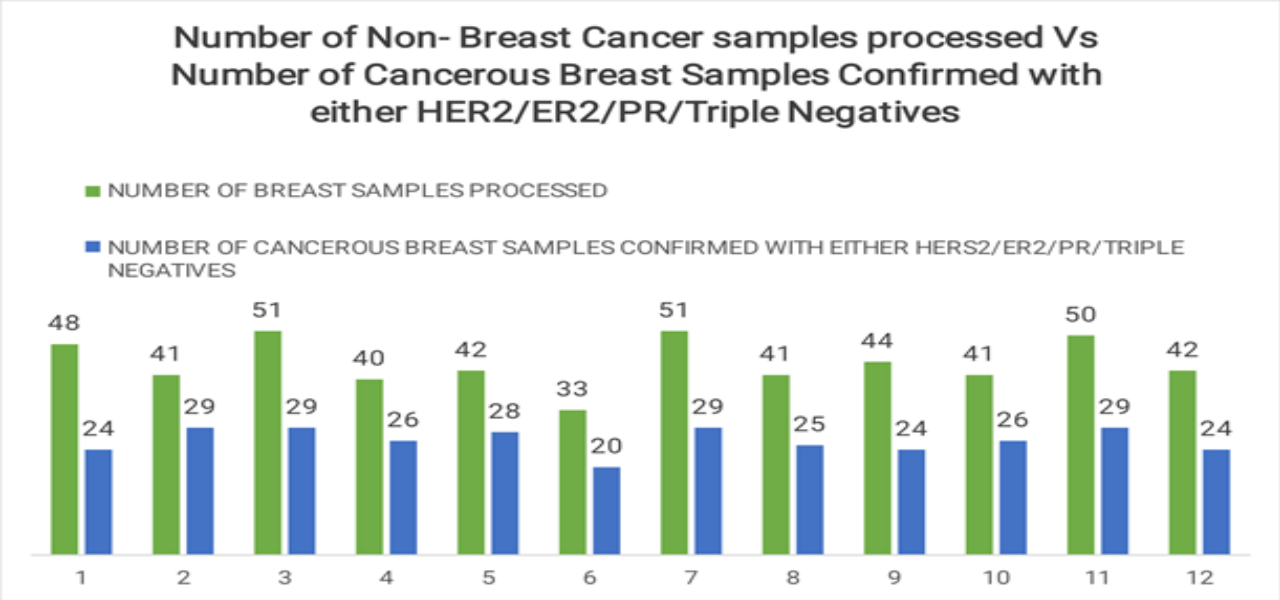

Table 2. Breast Cancer Knowledge Awareness Analysis Among Sampled Oncology Patients

DESCRIPTION OF CONCERNED AWARENESS	**Synopsis**	**Awareness level** %	Synopsis	**Non-Awareness level** %
Early detection of breast cancer involves breast examination for lumps, nipple discharge, skin redness, swollen lymph nodes	**X1**	**85**	**Y1**	**15**
Breast cancer could be in four categories viz	**X2**	**27**	**Y2**	**73**
-Invasive ductal breast cancer	**X3**	**5**	**Y3**	**95**

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DESCRIPTION OF CONCERNED AWARENESS	Synopsis	Awareness level %	Synopsis	Non-Awareness level %
-Carcinoma invasive lobular breast cancer	X4	10	Y4	90
-Carcinoma *in-situ* and inflammatory breast cance	X5	12	Y5	88
Least aggressive breast cancer is ductal carcinoma	X6	15	Y6	85
Most difficult breast cancer to cure is triple negative breast cancer	X7	10	Y7	90
Reason advanced for the difficulty lies in the lack of receptors for oestrogen, progesterone,or lack of enough HERS protein to make hormone target drugs	X8	5	Y8	95
Fast growing cancer types are HERS 2 positive breast cancers	X9	3	Y9	97
Stage 0 breast cancer does not require chemotherapy	X10	2	Y10	98
At the local stage, most breast cancers are found	X11	8	Y11	92
Most breast cancers start at the cells that line the milk duct	X12	7	Y12	93
Age range for the commencement of breast cancer >50 years and above	X13	30	Y13	70
Characteristics hardness is a prominent feature of lump	X14	80	Y14	20
Examples of silent cancers are breast,cervical, colorectal, ovarian and lung cancers	X15	25	Y15	75
There must be compulsory breast screening for all women	X16	95	Y16	05
Religious bias opposes compulsory breast screening	X17	5	Y17	95
Advocacy for full Government financing of breast cancer management is a must	X18	0	Y18	100
Advocacy for breast cancer management in various hospitals is a must for National Health Insurance Scheme	X19	0	Y19	100
Establishing oncology centers of excellence in all the thirty six states of the federation is a task that must be accomplished and endorsed by the government	X20	0	Y20	100

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DESCRIPTION OF CONCERNED AWARENESS	Synopsis	Awareness level %	Synopsis	Non-Awareness level %
Free specialist training in the fields of oncology for more health care providers is also a task that must be accomplished and endorsed by the government	**X21**	**0**	**Y21**	**100**
Advocating for full scale govt financing of all types of breast cancers and other cancers	**X22**	**0**	**Y22**	**100**
Immediate relieve of oncology patients from the heavy financial burden of breast cancer out of pocket expenses through complete saddling and shouldering of such responsibilities on National Health Insurance Scheme NHIS	**X23**	**0**	**Y23**	**100**
Establishing oncology centers of excellence in all the thirty states of the Nigerian Federation	**X24**	**0**	**Y24**	**100**
Free training for all current and future intending health care providers in oncology throughout the health institutions in the Nigerian federation	**X25**	**0**	**Y25**	**100**
Total		**419**		**2076**
Mean		**16.76**		**83.04**
Variance, SD^2		**688.24**		**770.12**
COMBINED VARIANCE, SD^2		**688.24 +770.12 = 1458.36/48 = 30.38**		
SD		**5.51**		
Standard Error, SE AT 48 DEGREES OF FREEDOM		**5.51 √ 1/25 +1/25 = 5.51√0.08 = 1.6**		
T23 = MEAN OF NON AWARENESS- MEAN OF AWARENESS / SE		**83.04-16.76 /1.6 = 41.4**		**T TAB =2.02** T CAL = 41.4
T 48 TAB, 2.02 < T48 CAL, 41.4	**LEVEL OF NON AWARENESS OF KNOWLEDGE ON BREAST CANCER IS SIGNIFICANTLY HIGHER THAN AWARENESS LEVEL AMONG PATIENTS ATTENDING ONCOLOGY CLINICS AT 95% CONFIDENCE LIMITS.** P< 0.05			

Prove of Hypothesis

Ha: There is significant difference in the breast cancer knowledge awareness and that of Non -breast cancer knowledge awareness among patients attending oncology clinics at the National hospital Abuja **(P < 0.05)**

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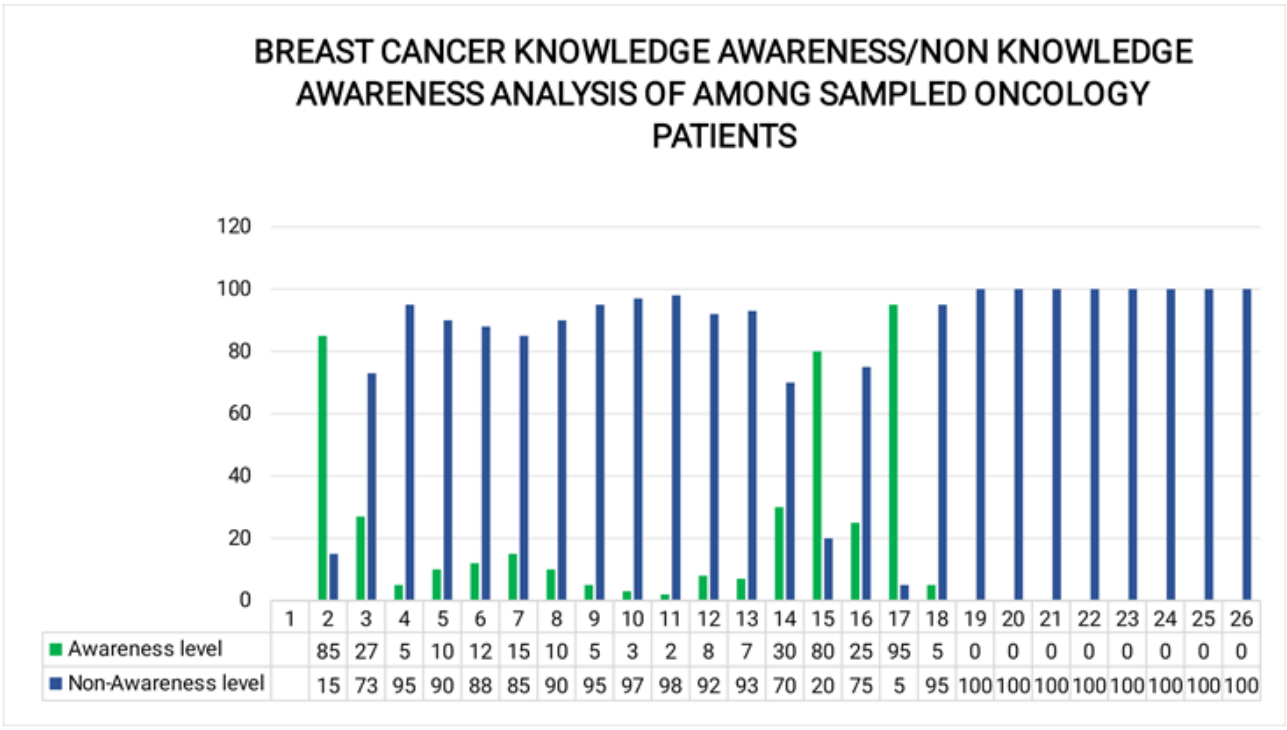

5. Discussion

Based on the fact that that we were dealing with qualitative samples, we adopted the Majar technique at arriving at our sample size. It was a year recruitment exercise from January 2024 to December 2014. Our year incidence rate from past literature was 10 per 100 patients or 100 per 1000 patients with new spells of either cervical or breast cancer. Five hundred and twenty four histopathology samples,524 samples of the patients attending oncology clinic at the National Hospital Abuja were assayed for the incidence of breast cancer; while one hundred and seven, 107 samples were assayed for the incidence of cervical cancer. In January of the same year, 2024 out of the total sampled for breast cancer three hundred and fifteen, 315 samples were breast cancer positive. A sample from a patient was confirmed positive for breast cancer if it was HERS 2 positive, ER positive or PR positive. HERS 2 positive means human epidermal surface receptor, ER means estrogen receptor positivity, while PR refers to progesterone receptor positivity. From January to December we prospectively assayed the the following quantities of samples, 48, out of which 24 were either HERS2, ER, or PR positive. In February, we assayed 41 samples in which 29 were positive for breast cancer. In March, we assayed 59 samples in which 29 were positive for breast cancer. In April, we assayed 40 samples in which 26 were positive for breast cancer. In May, we assayed 42 samples in which 28 were positive for breast cancer. In May, we assayed 42 samples in which 28 were positive for breast cancer.

In June, we assayed 33 samples in which 20 were positive for breast cancer. In July, we assayed 51 samples in which 29 were positive for breast cancer. In August, we assayed 41 samples in which 25 were positive for breast cancer. In September, we assayed 44 samples in which 24 were positive for breast cancer. In October, we assayed 41 samples in which 26 were positive for breast cancer. In November, we assayed 50 samples in which 29 were positive for breast cancer. In December, we assayed 42 samples in which 20 were positive for breast cancer.

On the whole t-test results showed a high level of significance of those who had no basic knowledge of breast cancer on those who had some knowledge ($P<0.05$)

Likewise the number of those who had breast cancer were significantly higher than those who had no cancer($P<0.05$). The annual incidence rate of breast cancer among the oncology patients were far higher than the incidence of cervical cancer as we obtained values of 60.7% for breast and 33.6% for cervical cancer. The

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calculated t test value was also higher for breast as compared with cervical indicating high level of significance of difference at 95% confidence levels. (P<0.05). These findings agreed perfectly with the work of other workers on breast and cervical cancers such as that of Ajayi *et al*, 2019 and the paper of Jedy Agba *et al 2015.*

From table four, for instance, following the analysis scrupulously carried out we found that the level of non awareness of knowledge on breast cancer is significantly higher than the awareness level among patients attending oncology clinics at 95% confidence limits. (P< 0.05). Patients should at least be aware of the early signs of breast cancer and even the late signs, such as hair loss and the rest. Early interventions information to combat the dreadful disease before it becomes fully blown and uncontrollable must also be adequately disseminated and propagated by those concerned; such as health NGOs, WHO, CDC, e.t.c.

6. Conclusion

Conclusion: This clearly showed that Breast cancer incidence cases among female attendee oncology patients aged 40 years and above is on alarming and geometric increase. Although the work is limited by the fact that it was hospital based research! Despite the unavoidable bias the study corroborated other qualitative breast cancer reports from other studies examined. The fact remains that the global increase in breast cancer cases and the unaffordable cost of medication and treatment are becoming very worrisome!!. lack of some core basic knowledge of the disease among the affected patients needs to be reversed so that they could co - manage the disease along side their health providers through their personal efforts in no matter how little way as far as possible.

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