

## Prevalence of Breast Cancer in First Time Patients Visiting the Federal Medical Centre, Abuja, Nigeria

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### **Abstract**

*Breast cancer, which is the most common malignant disorder affecting women, is characterized by the abnormal growth of cells in the breast. The study examined the burden of breast cancer in the Federal Medical Centre, Abuja, Nigeria. A sample of 300 women was taken from a population consisting of women between the ages of 18-75 years who were visiting the hospital for the first time for a period of six months. Patients were reviewed using predesigned questionnaires which focused on socio-demographic information and clinical information. The study employed statistical tools of Chi-Square and the Duncan Multiple Range test to analyse data. From a total of 300 patients screened, 65% of the studied population had grade II breast cancer while 35% had grade III breast cancer, while the most frequent histological feature observed was the invasive ductal carcinoma with 76.3% and invasive ductal carcinoma with lymphovascular invasion represented 23.7 %. The result from this study also showed that 56.4 % of the population had cancer on the right breast while 43.6 % had cancer on the left breast and 66.7 % of the cancer patients were diagnosed through trucut biopsy, 21.2 % through excision while 12.1 % was through incision technique. The findings of this study serves as a guide to health practitioners and educators in the design and execution of campaign towards oncological studies and advocates for greater public health initiatives, including education on early detection and better healthcare infrastructure, to combat the rising burden of breast cancer in Nigeria.*

**Keyword:** *Abuja, Awareness, Breast cancer, Prevalence, Risk factors.*

### **Introduction**

Breast cancer, which is the most common malignant disorder affecting women, is characterized by the abnormal growth of cells in the breast [1]. It was reported in 2020 to be the fifth leading cause of cancer death globally with 685,000 deaths associated with it [2]. Although it occurs in women of all races, however, discrepancies occur in diagnosis, mortality, and survival [3]. Incidence of breast cancer has been reported mostly in developed countries than in developing countries [4]. Notwithstanding, the incidence is increasing in developing countries like Nigeria, with many cases diagnosed at advanced stages, particularly

stages III and IV, where treatment options are more limited, and outcomes are poorer.

Breast cancer is quite familiar among premenopausal women in Nigerian, with cases typically occurring around an average age of 48. In Western Africa, Nigeria has been reported to have the highest breast cancer incidence rate at 50.5 cases per 100,000 women and an age-standardized mortality rate of 25.9 per 100,000. Data obtained from recent studies show that breast cancer represents about 22.7% of all cancer cases among Nigerian women, with an estimated 140,000 new cases annually, highlighting its high prevalence relative to other types of cancer in the country [5]. In the Abuja population-based cancer registry, breast cancer accounts for 55.6% and 45.7% among women

younger than 45 years and women aged 45 years and older [6]. A recent sub-Saharan African multinational study by [7] found that patients with breast cancer in Nigeria had the lowest three-year survival rate (36%) compared to 44% in Uganda, 47% in Zambia, 56% for Black women in Namibia and 59% for Black women in South Africa. While the outcomes remain low due to late presentation, the increase of breast cancer in Nigeria may be influenced by late-stage diagnosis, lack of awareness about early detection methods, and limited access to treatment options like immunohistochemistry, chemotherapy, and radiotherapy, which also lead to an increased mortality rate among affected women [8].

Several non-modifiable risk factors such as age, gender, family history, breast density and genetic factors have been reportedly associated with breast cancer [9]. Many reports have focused on patient-related and health system challenges from symptom development through to diagnosis in Hospital facilities in some parts of Nigeria but none has been reported in Federal Medical centre, Abuja. Hence, it is therefore imperative to identify how the incidence and mortality rate of the disease can be reduced by ascertaining its prevalence.

The objective of this study was to determine the prevalence of women with breast cancer in Federal Medical Centre Abuja, Nigeria by generating data on breast cancer among female attendees.

## **Materials and Methods**

### **Study Area**

The current study was conducted in the Oncological ward in Federal Medical Centre, Abuja, Nigeria. The choice of facility was informed by their size, volume, proximity of service to people and the geographical locations.

### **Study Design**

The study was a descriptive, cross-sectional design and a total number of 300 female

patients aged 18-75 years participated. The age group was chosen because a previous study by [10], reported this age bracket to be more affected in risk assessment. The study was carried out over a period of six (6) months between April and October, 2023 with well-structured questionnaires with both open and closed ended question administered to patients attending Oncological ward in Federal Medical Centre, Abuja.

### **Ethical Considerations**

Ethical approval was obtained from the Health Research and Ethics Committees, Federal Ministry of Health, Abuja. The study was conducted according to the principles of the Declaration of Helsinki while informed consent was sought from every participant before undertaking to participate in the study.

### **Demographic and Clinical Information**

Demographic and clinical information were obtained from questionnaires completed by patients, which include patient's gender, marital status, age, education (primary, secondary, diploma, University, post graduate), employment status (unemployed/employed), type of cancer and stage of cancer.

Participants were questioned about their past medical history including: parity, first symptom, menopausal status and duration of illness. Risk factors such as the use of alcohol, smoking, family history, use of contraceptive, lactation and previous history of benign breast lesions were also extracted. Body mass index (BMI) of each patient was estimated by taking the height and weight of participants and a BMI of 30 kg/m<sup>2</sup> or more was defined as obesity and 25 kg/m<sup>2</sup> or more was considered overweight [11].

### **Data Analysis**

Data obtained were analysed using the Statistical Package for the Social Sciences (IBM SPSS Incorp., Illinois, Chicago, USA) version 27 for Windows. Univariate analyses were presented in the forms of descriptive

frequency distribution of the socio-demographic. Association analyses were conducted using Chi-squared and analysis of variance (ANOVA) with Statistical significance set at  $P < 5\%$  level.

## Results

### Distribution of Breast Cancer Patients with Respect to Grade

From a total of 300 patients screened, Figure 1 illustrates that 65% of the studied population had grade II breast cancer while 35% had grade III breast cancer with statistical significance of ( $\chi^2 = 3.60, P = 0.058$ ).

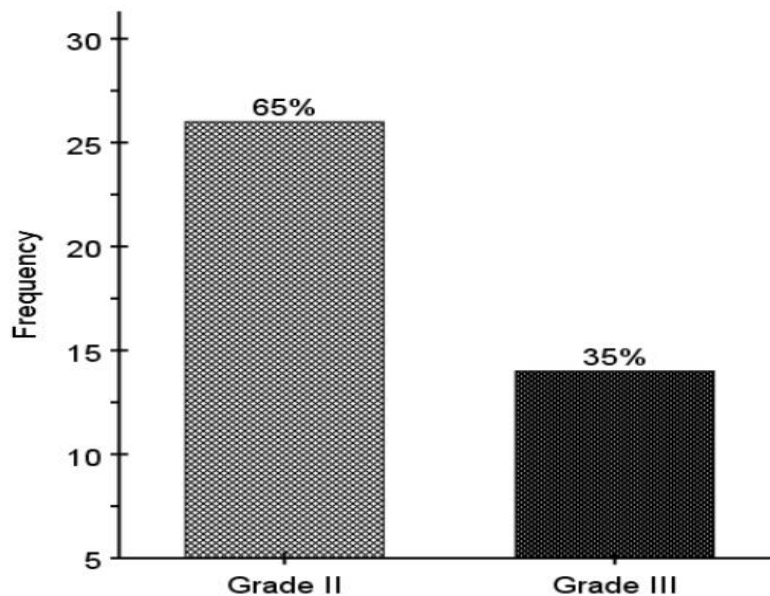


Figure 1. Distribution of Cancer Grade

### Distribution of Breast Cancer Patients with Respect to Histological Characteristic

Figure 2 shows that the most frequent histological feature observed was invasive

ductal carcinoma with 76.3% while invasive ductal carcinoma with lymphovascular invasion represented 23.7 % ( $\chi^2 = 10.53, P < 0.001$ ) of studied population with breast cancer.

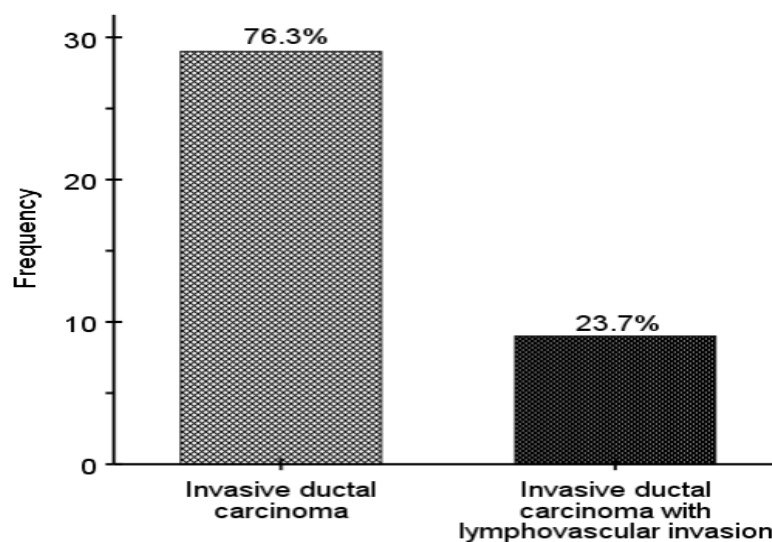


Figure 2. Distribution of Histological Characteristics of Cancer

### Distribution of Breast Cancer Patients with Respect to Breast Position

The result from this study showed that 56.4 % had cancer on the right breast while 43.6 %

had cancer on the left breast as shown in Figure 3. There was no statistical significance in the distribution of cancer on either the left or right breast ( $\chi^2 = 0.64, P = 0.423$ ).

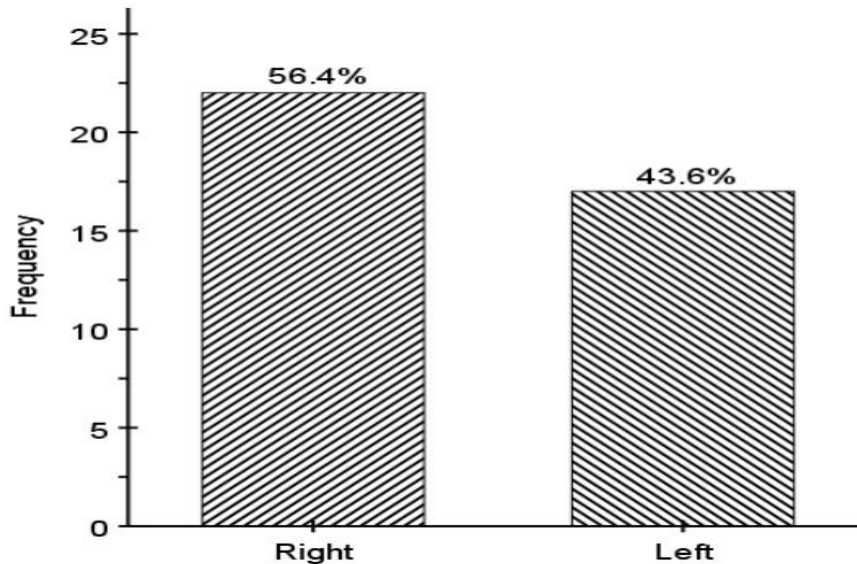


Figure 3. Distribution of Breast Cancer Position

### Distribution of Breast Cancer Patients with Respect to Biopsy Technique

The result from this study in Figure 4 shows that 66.7 % of the cancer patients were diagnosed through trucut biopsy, 21.2 % through

excision while 12.1 % was through incision technique. There was statistical significance in the distribution of cancer between all three diagnostic techniques ( $\chi^2 = 16.91, P < 0.001$ ).

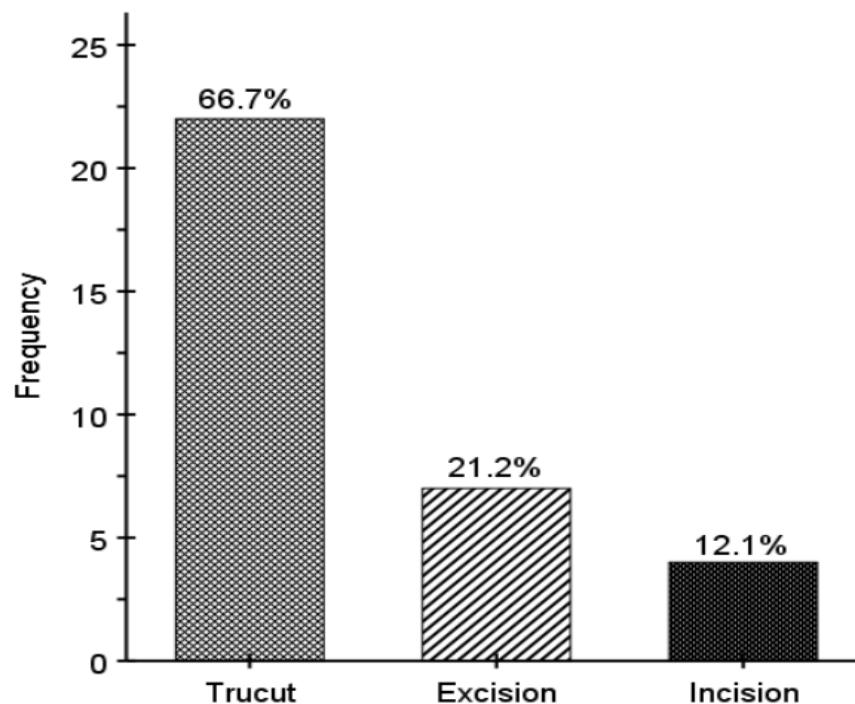


Figure 4. Distribution of Biopsy Procedure in Patients with Breast Cancer

## Discussions

It has been frequently reported that grade II breast cancer is more prevalent compared to other grades of breast cancer [11]. In similar research carried out by [11] in Radiotherapy Unit of Lagos University Teaching Hospital, Idi-Araba, Nigeria, 52.6 % of the population sampled were diagnosed with grade II breast cancer while 31.5 % had grade III breast cancer. A reason why the grade II is more often reported could be as result of the cancer not fast growing and spreading, looking like normal breast cells [12]. Hence, patients most times start to notice the symptoms visibly in the second grade and then go for breast examination.

Globally, the invasive ductal carcinoma is the commonest histologic subtype of breast cancer reported [13, 14, 15]. Similarly, in another study by [16], it was reported that 51.9 % and 48.1 % presented invasive ductal carcinoma in both the left and right breast respectively. Findings in this study corroborates previous reports as cancer patients in this study represents 76.3% of the breast cancer patients examined. Lymphatic invasion which is the presence of tumour emboli lymphatic vessels or blood capillaries without underlying smooth muscle and elastic fibres has been reported to be a predictor of worse prognosis in patients with invasive ductal carcinoma of the breast [17].

The reason why most of the studied population had more of invasive breast cancer, may have been driven by hormones, or hormone (estrogen/progesterone) receptor (HR)-positive [17]. Quite a number of reported cases have HER2-positive and HR-negative, implying that the cancer cells make a higher-than-normal amount of the HER2 protein, which facilitates tumor growth.

In a study published by [18], it was suggested that breast cancer is slightly more common in the left breast than in the right. Similarly, The National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) program also corroborated this finding,

where according to the data obtained of more than 881,000 people with breast cancer, 50.8% of breast cancers occurred on the left side compared to 49.2% on the right. All these reports contradict with the current study which recorded a higher number of breast cancer on the right breast 56.4% compared to the left 43.6%.

A possible reason why most of the previous studied population had cancer on the left breast than on the right may be because of factors like breast size and density and breast feeding [19]. Most people reportedly breastfeed with their right breast hence making the left breast to retain breastmilk more thereby reducing the protective effect of breastfeeding in the left breast [20, 21]. Contrary to this assumption, majority of Nigerians are right handed and this translates that they automatically breast feed the children more on the left breast while the right breast continues to retain milk, this could be the reason for more manifestation of the breast cancer on the right breast.

Tru-cut needle biopsies form an essential part of Triple assessment of breast cancer which encompasses clinical assessment, mammography and core needle biopsy. In a retrospective study reported by [22] of patients with tru-cut needle biopsies of breast lumps which was followed with excisional biopsy carried out in the Department of Surgery, University College Hospital, Ibadan over a ten-year period, Tru-cut needle biopsies had a comparable sensitivity and specificity to excisional biopsies. This made the Tru-cut the choice method for biopsy in the study population

## Conclusion

The findings from this study has underscored the significant prevalence of breast cancer disease in the Federal Medical Centre, Abuja, Nigeria. The study highlighted critical patterns and characteristics associated with the disease in the region. The high incidence of grade II breast cancer among patients aligns with

previous reports, indicating its slower progression compared to other grades. Furthermore, invasive ductal carcinoma was found to be the most prevalent histological subtype, confirming its global dominance and relevance in breast cancer cases. While the study observed a slightly higher occurrence of cancer in the right breast, this result contrasts with some earlier reports that favor the left breast, suggesting possible regional or lifestyle-related factors at play.

The study also illustrated the predominance of Tru-cut biopsy as the diagnostic technique of choice, emphasizing its efficiency in detecting breast cancer in the population. The results from this study contribute to a deeper understanding of breast cancer dynamics in Nigeria, pointing to the importance of early detection and intervention strategies. Addressing challenges related to late-stage

diagnosis, limited access to treatment, and lack of awareness can significantly improve survival outcomes. Therefore, the findings of this study serve as a guide to health practitioners and educators in the design and execution of campaign towards oncological studies in the Federal Medical Centre, Abuja, as well as advocate for greater public health initiatives, including education on early detection and better healthcare infrastructure, to combat the rising burden of breast cancer in Nigeria.

### Conflict of Interest

There is no conflict of interest

### Acknowledgements

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