

Clinicopathologic Profile and Review of Breast Cancer Patients in a Resource Limited Setting: The Unimedthc Experience

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ABSTRACT

Background: breast cancer is the commonest cancer found amongst women. It is the leading cause of cancer death in Nigerian women. The burden of breast cancer is high among women of all age groups in Nigeria. The clinical and pathological presentation of breast cancer among women in Ondo state, South West Nigeria has its peculiarities with the limited available resources. **Objective:** to evaluate the clinico-pathological factors of breast cancer. To access the treatment profile and the overall outcome of patients with breast cancer. **Design:** the study is a descriptive analytical hospital based study from case records of patients attending outpatient clinic at a tertiary hospital facility in Akure, Ondo state, South West, Nigeria. **Method:** a total of 312 cases were included for the analysis and duration was from March 2013 to April 2018. Data with respect to demographic status, histological status, tumour stage, treatment offered and outcome was collated and collected from the records of patients attending the oncology out-patient clinic at University of

medical science teaching hospital akure, ondo state south west nigeria. Result: a total number of 312 patients with breast cancer were analyzed. The most common age group was 33 years to 42 years, with a mean age of 47.8 years. Many of the participants 57.7% had secondary education. 84.3% of the women were married and 35.9% had parity of 3. The commonest histological type is the invasive ductal carcinoma. 4.5% resided outside akure. Many of the participants 44.2% presented with stage 3 of the disease and the commonest site of metastasis was the lungs. Conclusion

Keywords: breast cancer, clinic-pathological, treatment

INTRODUCTION

Breast Cancer is a common malignancy globally and in Nigeria. It affects both sexes i.e. males and females albeit with the occurrence predominant in women^{1,2}. The incidence of breast cancer has increased 2-3-fold in low middle-income countries compared to developed countries². This has been accompanied by a complementary increase in the death rate in developing countries – 15.0 per 100, 000 compared to 12.4 per 100, 000 in developed nations². Breast cancer is the most frequent cause of cancer related mortality among women in all countries of the world.⁶⁰ The incidence rates of breast cancer are stable or declining in the developed countries since 2000. The frequencies of the disease are steadily rising in developing countries.^{61, 62, 63}

Globally, female breast cancer is currently the most commonly diagnosed cancer with a reported 2.3 million cases in 2020³. In Nigeria, Breast Cancer accounted for 22.1% of all total new cancer cases in 2020 and 38.7% of all new cases in females³. Data on local prevalence within Ondo is hard to get by. However available data in Ibadan^{4,5}, Lagos and Ife⁶ (all within a 180 km radius) show that breast cancer still remains the most common form of cancer in our geographic locale.

Breast cancer is a heterogeneous disease with varied clinical and pathological features. The features include age, stage at presentation, tumour size, axillary lymphnode, histologic grade, estrogen receptor status, human epidermal growth factor receptor⁶⁰, the type of treatment offered and possible outcome. All this helps to determine the prognosis of the patient with breast cancer.

The incidence rates of breast cancer show considerable global variation being higher in developed countries than in developing countries. In Africa, breast cancer has overtaken cervical cancer as the commonest malignancy affecting women and the incidence rates appear to be rising.⁶⁴

The clinical stage of the disease at presentation is important for the outcome of the patient with breast cancer. However, in most African countries, patients present late with advanced stage of the disease and only palliative care is possible.^{65, 66}

The management of breast cancer poses a great challenge in resource limited societies as found in Africa. Late presentation of the disease, lack of adequate mammography screening

programmes, preponderance of younger pre-menopausal patients and a high morbidity and mortality are among the hallmarks of the disease in Africa.⁶⁴

Diagnosis of breast cancer is often multi-disciplinary involving clinical, radiologic and histopathologic input. This has been collectively referred to as the “Triple test” and has been relatively accurate in arriving at a definitive diagnosis of malignancy in patients^{7,8}. Specificity of the triple test can however be improved by replacing the cytologic component (Fine Needle Aspiration Cytology) with a core needle biopsy (CNB) within the histopathologic modality of diagnosis. Variations in the “triple test” has been noted in centres with an alternative mono-testing comprising only a radiologic or histopathologic component depending on the availability of diagnostic facilities and skilled personnel. Fine needle Aspiration Cytology (FNAC) as a single modality in our environment has a good sensitivity and specificity in the diagnosis of malignancy^{9,10}. An added benefit to the utility of radiologic imaging in the diagnosis of breast cancer is that it can additionally be used for early cancer screening^{11,12}.

Unfortunately, the unavailability of mammography in most centres in our environment along with personnel arguably makes radiologic screening un-effective¹². This necessitates more emphasis on Self Breast Examination (SBE) and Clinical Breast Examination (CBE) as being more feasible and of practical utility in our environment¹²⁻¹⁴. Clinical Breast Examination is expectedly preferred as any clinical discrepancy can be immediately followed up by the health worker involved in the examination potentially minimizing the time to diagnosis and institution of treatment modalities^{12,13}.

The increasing mortality and burden of breast cancer in Nigeria and Africa at large is a worrisome trend that has been noted in literature especially in light of non-existent or poorly equipped health facilities needed to handle these rising oncologic cases, poor data quality and dearth of existing literature reflecting the critical situation in our environment^{1-3,15-17}.

This study intends to give a contemporary appraisal on the clinico-pathologic profile of breast tumours diagnosed at our centre, (the University of Medical Sciences Teaching Hospital Complex). This is also to document the clinico-pathological characteristics and profile of breast cancer at our treatment facility.

This is with a view to highlighting critical findings and our burgeoning problems in routine practice. This way the authors aim to contribute to the existing literature and data regarding breast cancers in our environment.

MATERIALS AND METHODS

This study was a cross-sectional retrospective study involving 312 patients at the University of Medical Sciences Teaching Hospital Complex, who had histologic confirmation of breast cancer diagnosis from either needle or open surgical biopsy after presentation at the hospital. The time period of this study was over seven years from January 2012- December 2018. The University of Medical Sciences Teaching Hospital is a multi-sited multi-specialist hospital complex offering tertiary specialist care as well as referral services spanning three geographical locations across Ondo state. It has a combined bed capacity of 800 beds. It serves primarily the indigenes of Ondo state as well as the border towns of the neighboring Osun, Edo and Ogun states.

All surgical samples (i.e. open or incisional biopsies) were preserved in 10% buffered formalin and allowed maximum time for fixation not exceeding 48 hrs. Fresh mastectomy samples were serially sliced immediately on receipt and allowed to fix in formalin. The size of all samples including lumps, mastectomies with embedded tumours were documented at cut up, however they were not analyzed for the purpose of this study. Samples were processed as Formalin Fixed Paraffin Embedded tissue blocks from which histological slides stained with Haematoxylin and Eosin were prepared.

Histologic diagnosis of all breast cancers was carried out using the World Health Organization's Classification of Tumours of the Breast (4th Edition)¹⁸. Diagnosis included histologic grading assessment using the modified Scarf Bloom Richardson grading system. Ancillary hormonal receptor immunohistochemistry (ER, PR and HER2) testing was carried out on paraffin embedded tissue cassettes of processed breast cancer samples released to the patients to peripheral institutional and private laboratories. All clinical data variables were sourced from hospital records (including hospital case notes, radiology and histopathology forms.). All benign breast tumours as well as metastatic tumours to the breast were excluded from the study.

Radiation oncology modalities for external beam radiation etc. are presently unavailable at our hospital, so patients requiring such treatment modalities are documented, referred and co-managed with neighboring facilities where these services are present. However, access to other forms of oncology service i.e. chemotherapy are readily available at our institution.

Ethical clearance was obtained from the joint ethical clearance board of the University of Medical Sciences Teaching Hospital and Ondo state. Research ethics were adhered to as stated under the guidelines of the Helsinki Declaration. Data was analyzed using the statistical software package for the social sciences. (SPSS v. 25).

RESULTS

A total number of 312 patients with breast cancer were analyzed. The most common age group was 33 years to 42 years, with a mean age of 47.8 years. The standard deviation of 13.05. Many of the participants 57.7% had secondary education. 84.3% of the women were married and 35.9% had parity of 3. The commonest histological type is the invasive ductal carcinoma. 4.5% resided outside Akure.

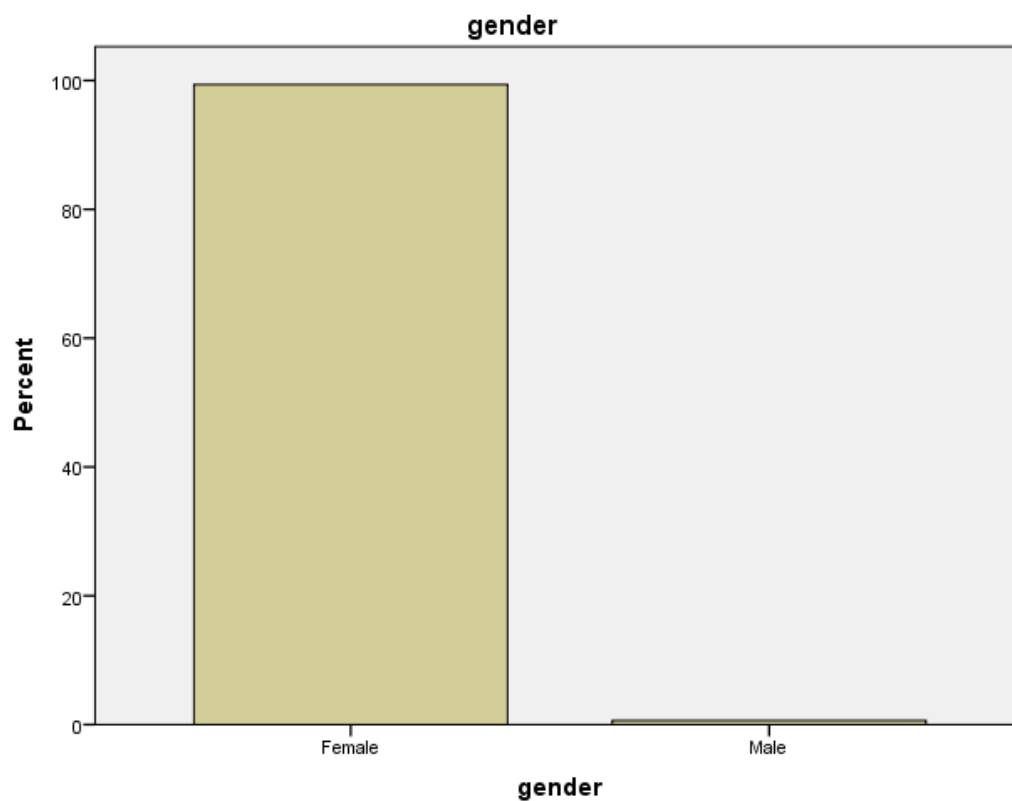


Figure1. Gender Distribution among the breast cancer cases

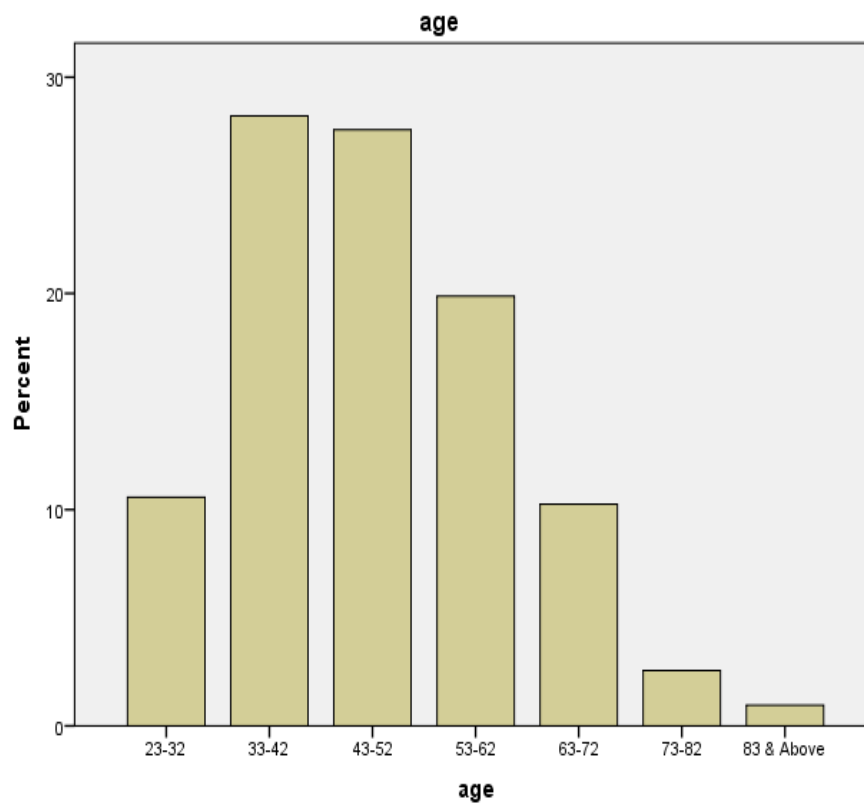


Figure 2. Age distribution among the patients

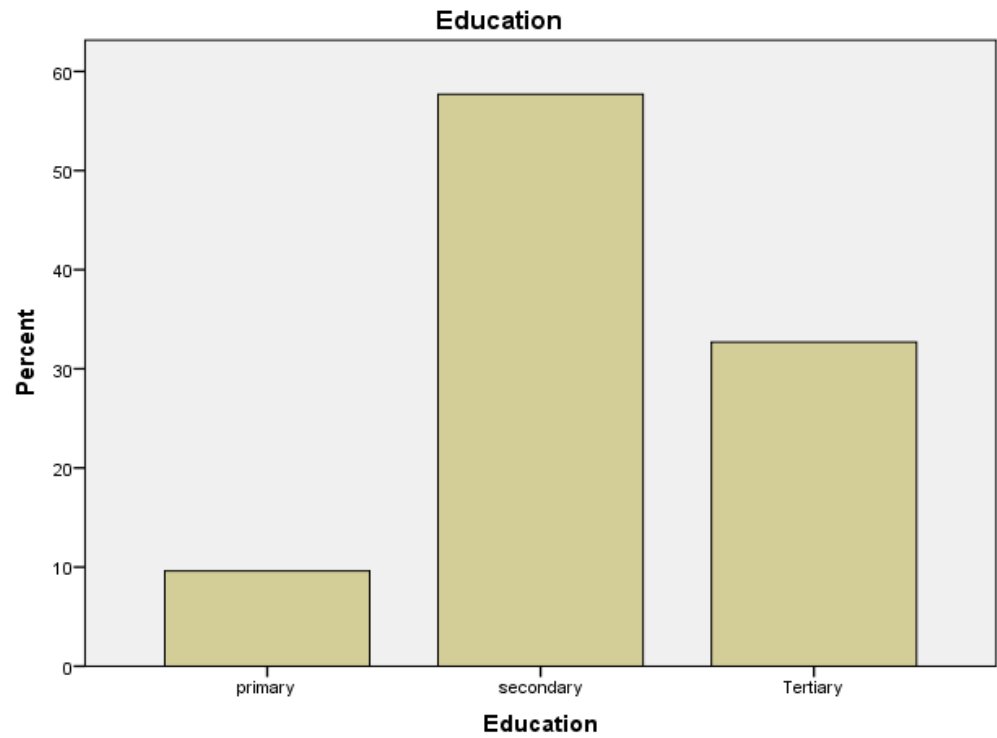


Figure 3. Distribution of Educational level among the patients

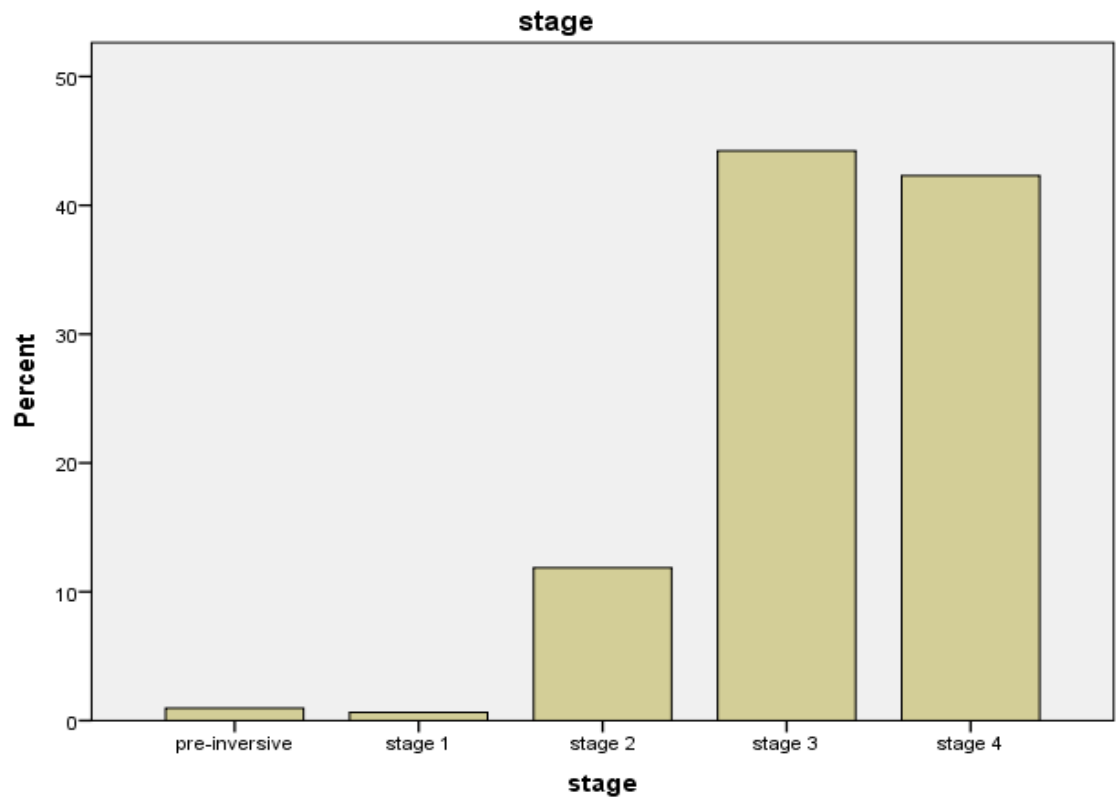


Figure 4. Distribution of Stage of Disease at Presentation

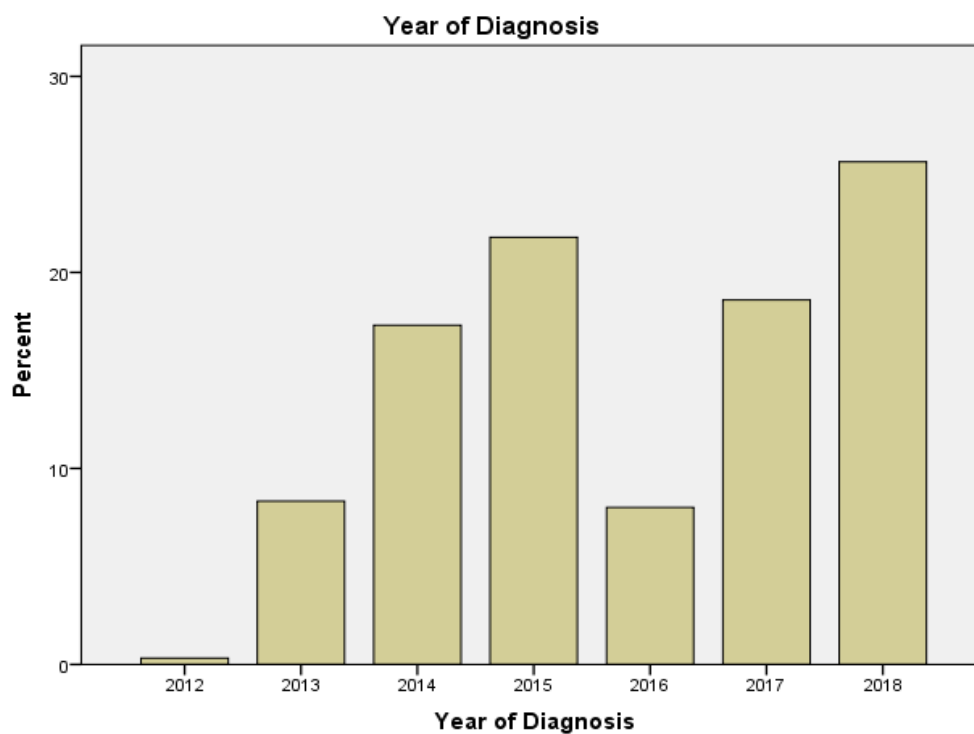


Figure 5. Patient turn-over during the years of study

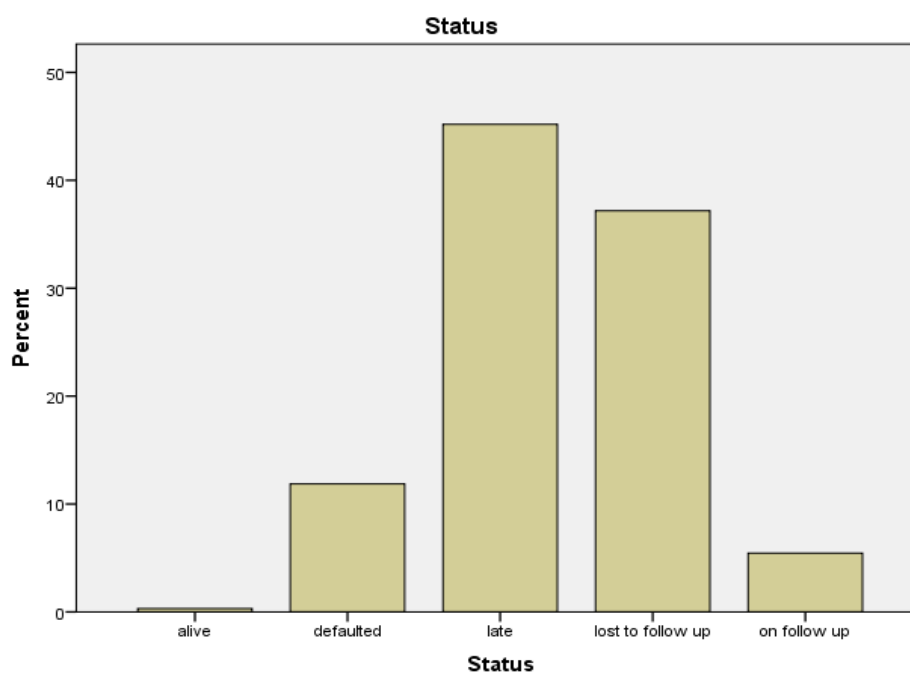


Figure 6. Distribution of Patients Outcome during the period of study

Table 1. Distribution of Marital Status

Marital Status	Frequency (%)
Never Married	5 (1.6)
Married	263 (84.3)
Divorced	11 (3.5)
Widowed	33 (10.6)
Total	312 (100)

Table 2. Referral Status among the patients

Patient Status	Frequency (%)
Primary	298 (95)
Referred	14 (4.5)
Total	312 (100)

Table 3. Sites of Metastasis

Site	Frequency
Bones	10 (3.2)
Brain	2 (0.6)
Brain and Lungs combined	6 (1.9)
Brain and Spine combined	1 (0.3)
Liver	3 (1.0)
Lungs	83 (26.6)
Lungs and Bones combined	4 (1.6)
Lungs and Liver combined	12 (3.8)
Spine	4 (1.3)
No metastasis	187 (59.9)
Total	312 (100)

Table 4. Histologic Variants

Histologic type of Breast Cancer	Frequency (%)
Ductal Carcinoma in Situ	3 (1)
Invasive Carcinoma (NST)	294 (94.2)
Invasive Lobular Carcinoma **	8 (2.6)
Medullary Carcinoma **	2 (0.6)
Mucinous Carcinoma**	3 (1)
Spindle cell Carcinoma (Metaplastic Carcinoma) **	2 (0.6)
Total	312 (100)

**** Refers to a type of rare breast cancer. Rare breast cancers in this study constituted 2.2% of all breast cancers**

Table 5. Axillary Lymph Node Status

Axillary Lymph Node Status	Frequency (100%)
Documented	
^a Positive	8 (2.6)
^b Negative	12 (3.8)
Not documented	292 (93.6)
Total	312 (100)

Table 6. Laterality of Breast Cancer

Laterality of Breast Cancer	Frequency
Right	151 (48.4)
Left	138 (44.2)
Bilateral	22 (7.1)
Total	312 (100)

As seen above, majority of breast cancers were right sided.

Table 7. Immunohistochemistry Use in diagnosis of breast Cancer

Immunohistochemistry Status	Panel Results	Frequency
Done		14 (4.5)
	Lumina A	6 (1.9)
	Lumina B	4 (1.3)
	HER 2 Positive	3 (1.0)
	Triple negative	1 (0.3)
Not Done		298 (95.5)
Total		312 (100)

Table 8. Preceding Ancillary Cytology result

Cytology Status	Grade	Frequency (%)
Done		49 (15.7)
	C1	2 (0.6)
	C2	10 (3.2)
	C3	1 (0.3)
	C4	20 (6.4)
	C5	16 (5.1)
Not Done		263 (84.3)
Total		312 (100)

FNAC showed a diagnostic accuracy of 73.5%.

Table 9. Treatment modalities in the study

Treatment Modality	Frequency
Surgery**	
<i>Carried out</i>	61 (19.6)
<i>Not carried out</i>	251 (80.4)
Chemotherapy	
<i>Carried out</i>	268 (85.9)
<i>Not carried out</i>	44 (14.1)
Radiotherapy	
<i>Carried out</i>	40 (12.8)
<i>Not carried out.</i>	272 (87.2)

Note that surgery ** includes both modified radical mastectomy, wide local excision and incisional biopsies.

Table 10. Association between referral status and stage at presentation

	Frequency (%) Pre-Invasive	Stage 1	Stage 2	Stage 3	Stage 4	P value	Total
Referral Status						0.028*	
Primary	3	2	37	138	118		298 (95.5)
Referred	0	0	0	0	14		14 (4.5)
Age Bracket						0.016*	
23-32	3	2	28	0	0		33(10.6)
33-42	0	0	9	79	0		88 (28.2)
43-52	0	0	0	59	27		86 (27.6)
53-62	0	0	0	0	62		62 (19.9)
63-72	0	0	0	0	32		32 (10.3)
73-82	0	0	0	0	8		8 (2.6)
83 & Above	0	0	0	0	3		3 (1.0)
Total							

* significant value

DISCUSSION

This study showed that breast cancer in our environment mainly affects females (Figure 1) as seen in other climes, with a male breast incidence of 0.6%. The disease is common across all age groups with peak prevalence in the 3rd to 5th decade which bears the heaviest burden of disease (Figure 2). Possible risk factors as documented in our environment include high calorie intake, lack of exercise, elevated blood pressure, low height, elevated body mass Index possible environmental pollutants¹⁹⁻²³. Interestingly, a contrary view of an inverse relationship of body mass index with breast cancer has been postulated among female Nigerian breast cancer patients²³. Most of the patients in our study were exposed to education, albeit with secondary level of education being the highest level achieved (Figure 3). Educational level has been proven to be significant in most patients presenting with symptomatic breast cancer, as it is believed that with exposure to screening modalities as well as diagnostic facilities is more common with a higher degree of education²⁴. The secondary level of education notwithstanding, most patients in the study presented at a late stage of disease i.e. stages 3 and 4 (Table 10). This calls into question the knowledge and exposure of breast screening methods in the local populace as well as any other factors that may mitigate against early treatment. Olabisi et al²⁵ had earlier reported a poor knowledge and attitude with regards breast cancer screening practices among female secondary school students within select schools in Akure, the state capital. This poor awareness and attitude to breast cancer screening among females also extends to the rural populace who also exhibit knowledge deficits in pertinent issues regarding breast cancer screening, diagnosis and treatment²⁶. This is possibly due to the lack of reach of information within the local community on breast cancer screening practices by mass media as well as minimal interaction of the local populace with community health personnel who constitute a reputable medium of information on breast cancer screening practices²⁶. Other authors have argued that knowledge of breast cancer and its screening methods is well known among populace, however the “fatalistic beliefs” of the populace borne from the unfortunate shared experiences of cancer deaths of relatives or community members have rendered all attempts at breast screening to be passive in nature¹⁴.

From the histopathologic perspective, diagnosis of breast cancer is often achieved either via cytology or histology (CNB)²⁷. The latter has been proven to be more accurate and specific, however in some climes fine needle aspiration breast cytology has also been used as it is also fairly accurate, less invasive and cheaper^{9,10,27}. It would therefore be expected that in a low resource setting such as ours with cultural and financial bias against invasive modalities of breast cancer diagnosis, fine needle aspiration cytology would be readily grasped. In stark contrast, this study showed a low access to fine needle aspiration cytology (15.7%)- Table 8. The diagnostic utility, with regards accuracy and specificity among the patients done were fair and in keeping with other studies in our environment⁹. Possible reasons for discordant cytology results could be unsatisfactory smears, lack of skilled personnel, discordant clinical presentation as well as poor clinicopathologic correlation especially in deceptive cases of low grade well differentiated invasive cancers mimicking benign breast entities²⁷. Such scenarios are further worsened by inadequate follow up along with poor access to specialist health care given the prevailing high costs and thus complete “loss of faith” in standard healthcare.

Adequate and complete histologic diagnosis of breast cancer datasets involves grading according to the modified scarf bloom Richardson system^{28,29}, documentation of the vascular and lymph node status, accompanying immunohistochemistry for hormonal receptor classification and finally the stage of the cancer³⁰. To address realistic expectations on adequate healthcare delivery with regards breast cancer in low middle-income countries (LMIC) like Nigeria, minimal breast cancer datasets have been reproduced³¹. Using the minimal dataset, completeness of a clinical report includes five clinically relevant features i.e. tumour histology, tumour grade, laterality, ER/PR and HER2 status³¹. For a histopathologic report, 7 items are regarded as essential for completeness including tumour size, tumour histology, tumour grade, laterality, axillary lymph node status, ER/PR and HER2 status³¹. These criteria are best implemented by a tumour board, which is presently non-existent in our hospital. In addition, the histopathology department is yet to institute a unified breast pathology template due to frequent change in personnel over time. From our experience, most of these prognostic indices are not routinely documented in surgical and pathology reports, thus rendering our breast cancer reports “incomplete”³². This is not exclusive to our hospital³². Personal observations by one of the authors includes submission to the laboratory of inadequately labelled breast specimen with unlabeled margins, absent sentinel lymph node identification, and absent radiologic imaging or absence of documented radiologic findings if done. This has been seen both in primary and secondary (referred) breast samples, though more common in the latter scenario.

Immunohistochemistry is much needed in the diagnosis, molecular stratification and subsequent prognosis and treatment of breast cancers³³. The absence of immunohistochemistry in routine diagnosis is often a hydra headed problem experienced by the clinicians, pathologists and patients. In this scenario, the patient often bears the brunt with respect to the burden, morbidity and eventual mortality of the disease. This financial outlay and implications in running an efficient and consistent immunohistochemical service is often daunting to the histopathologic laboratories involved. In addition, when available, the costs of these tests are cannot often be borne by the patients- the cost of a generic immunostain breast receptor antibody often averages \$20 -\$40. This is especially pertinent when considering that majority of our local populace live below \$2 a day, are mostly agrarian in occupation and largely under or unemployed with no health insurance. The implications of the aforementioned issues

in running an efficient breast immunohistochemistry service cannot be overstated. This explains why ancillary immunohistochemistry diagnosis as seen in this study is barely existent (Table 7). In our study, the available immunohistochemical results gotten were from financially privileged patients who patronized the few relatively expensive private non-governmental Pathology laboratories. The histopathology laboratory in our institution currently offers no immunohistochemistry service. Similarly, studies from centres across the country have also shown low immunohistochemistry rates in the diagnosis of breast cancers³². However, the sub-par values as presented by our study -(Table 7) also reflects the lack of access by our local populace to similar standards offered in other histopathology laboratories across the country as well as possibly exposing hitherto unrecognized economic disparities in the populace necessary for improved access to healthcare. This calls for more attention to funding and improving diagnostic histopathologic breast cancer services in our locale.

The inability to properly characterize the hormonal receptor expression of the breast cancer often affects the nature of treatment given by the oncologist, and thus renders treatments based on epidemiology and clinical intuition. This is not uncommon to our centre and in sub-Saharan Africa at large³⁴. Add to this the frequency of late presentation (i.e. stage 3 and 4) as seen in this study – (Table 10), then the nature of the burden and morbidity of breast cancer in our environment becomes better appreciated and worrisome. A significant number of patients presented with multi-organ metastasis with the lungs, bones and brain the most affected organs respectively – (Table 3). This pattern of presentation is in contrast to that reported by Hassan et al³⁵.

Regarding histologic subtypes of breast cancer, Invasive Carcinoma (NST) was found to be the most common variant seen, followed by lobular carcinoma, mucinous carcinoma, medullary carcinoma and metaplastic carcinomas (Table 4). As evidenced in virtually all studies across the country, invasive carcinoma (NST) remains the most common subtype seen within the country^{36–45}. Centre to centre variations are however noted with respect to the pattern of frequencies among the other sub-types. A few studies across the country are in complete concordance with the pattern of frequency of the other histologic sub-types as seen in our study^{41–43}. Rare breast cancers i.e. mucinous carcinoma, medullary carcinoma, tubular carcinoma have been noted to account for less than 2% of all breast cancers globally⁴⁶. In our study, these rare cancers account for roughly 2% of all cancers diagnosed- (Table 4), which is similar to Acevedo et al⁴⁶. Locally, there are discordant figures with various rates given, with sub-types like medullary being more prevalent than mucinous cancer in a few centres³⁷. Possible reasons for this include limitations on sample size in the various centers as well as relative subjectivity among pathologists in the diagnostic criteria employed.

The late presentation of our patients is particularly worrisome but not uncommon^{42,47,48}. A lifespan of a diagnosed breast cancer patient in Nigeria averages 9.5 – 30 months⁴⁷. This has contributed to the poor survival outcome. Although survival may ultimately depend on the histologic type of breast cancer as well as hormonal receptor characterization of the breast cancer⁴⁸. Triple negative cancers account for a heavy morbidity among some of our patients within the country^{38,40,42,45,49}. However due to the poor immunohistochemistry rate, only 1 case of triple negative was reported in this study. Reasons attributed to the delay include patient delay (time from onset of symptoms to the first interaction with the physician) and provider delay which includes both diagnostic and treatment delay. Patient delay may stem from quality

of medical care, ignorance as well as cultural and religious beliefs. Diagnostic delay occurs from the first consultation to the confirmation of pathologic diagnosis, while treatment delay occurs from confirmation of pathologic diagnosis to initiation of treatment. Treatment delay may occur from concerns about possible mastectomy which leads patients to temporarily abandon hospital treatment for other alternatives⁴⁷. Unfortunately, the eventual outcome is the re-presentation of the patient, this time with a higher tumour burden and cancer stage. This time period gives room for disease progression and poor survival⁴⁷. This is a common narrative amongst most patients in Nigeria, however not much is mentioned with regards to the afore mentioned provider delay which is poorly documented. In our experience, absence of skilled personnel (i.e. availability of histopathologists, diagnostic equipment (i.e. radiotherapy facilities, functioning histopathologic laboratory) and industrial action by health staff were major factors contributing to the late presentation of our patients. Ironically, some authors have documented a worse prognosis occurring with shorter provider delay⁵⁰. The reason for this is clinician bias in tending to approach aggressive tumours with more priority compared to the less aggressive ones⁵⁰. This gives room for hitherto low-grade malignancies to undergo tumour progression and spread to become systemic in course⁵⁰. This was not documented in this study.

Treatment modalities for breast cancer include surgery (local excision and modified radical mastectomy), chemotherapy and radiotherapy. Globally, especially in Africa these modalities are often integrated and implemented with respect to unique socio-cultural as well as financial status in different regions. In Nigeria, common modalities available for treatment of breast cancer include Surgery (Mostly modified radical mastectomy), Chemotherapy (Neo-adjuvant) and Radiotherapy. Surgery in the form of mastectomy is often the commonest modality for treatment in our environment, as financial resources or even access to the other modes of therapy may be limited. Previous studies have reported a surgery rate of 35.2% across Nigeria. However, this is variable in routine clinical practice. Interestingly, among our patient's chemotherapy was the most common treatment option (85.9%), as compared to surgery and radiotherapy modalities which were 20% and 12.9% (Table 9). This suggests that a large number of patients presented with unresectable or metastatic cancer, as these afore mentioned clinical scenarios preclude the use of surgery as a treatment modality. These further buttresses our earlier highlighted observation on the late presentation of most of our patients. Similar studies across other tertiary centers have shown the preponderance of chemotherapy over surgery as a treatment modality in breast cancer management. These studies may be biased as the centers involved are multispecialty tertiary centers with radiation therapy referral services. Unilateral modified radical mastectomies constituted the most common type of surgery (98.3%). There were no documented cases of breast conserving surgery, also highlighting the late stage of presentation. The right breast was had most of the lesions- (Table 6). Axillary lymph node status was indicated in only 6.4% of the samples. This renders a huge challenge in rendering multimodal treatment outcomes as well as in determining the extent of adequate surgical margins⁵¹. Sonographic evaluation of axillary node in breast cancer patients has been observed to be of great utility in our environment⁵². Institution of protocols with sonography of axillary lymph nodes may prove beneficial and cost effective in the management of our cancer patients. Positive axillary lymph nodes from a cohort of patient studies have been documented to show lower 5-year survival rates than in patients with negative lymph nodes⁵¹.

Chemotherapy in our environment is often influenced by the stage and nature of breast cancer, patient's and patient's family willingness, socio-cultural, religious factors as well as cost and

access to the drug⁵³. The cost of these drugs is often expensive and unaffordable by most of our patients, including the low-priced generic brands⁵³. Unfortunately, the high prevalence of triple negative tumours in our environment necessitates the need for the use of second and third generation Taxane based treatments which are often quite expensive⁵³. In addition, the nature of our poorly characterized cancers hinder appropriate chemotherapy and radiotherapy treatment in our environment despite harmonized low middle-income resource country treatment guidelines^{34,54-56}. Popular treatment regimens available to us include the FEC regimen (5 Fluoro-uracil, Epirubicin and Cyclophosphamide), the CAF regimen (Cyclophosphamide, Adriamycin, and 5 Fluoro-uracil) and the CMF regimen (Cyclophosphamide, Methotrexate, and 5 Fluoro-uracil). These can be instituted as neo-adjuvant, adjuvant, peri-operative and palliative. More commonly in our centre, it is given as neo-adjuvant. The most common regimen used for our patients include the FEC regimen and AC regimen used as neo-adjuvant therapies along with surgery for early stage cancers (Stages 1 and 2) and Taxanes and Capecitabine based chemotherapy used as adjuvant and palliative therapy for late stage cancers (Stages 3 and 4).

Access to radiotherapy is the most challenging problem in the management of all our patients with breast cancer. The service is unavailable due to the lack of external beam radiotherapy machines. This necessitates co-management and referral of all our patients in need of radiation therapy to the very few centers across the country where it can be obtained. Unsurprisingly, in our study, Radiation therapy modality had the least number of patients among the treatment modalities (12.8%).

Nigeria has been described to have “one of the biggest gaps between radiation therapy availability and need”⁵⁷. Limited availability of external beam treatment modalities, increased patient pressure on limited facilities coupled with limited financial resources often lead to delay in the commencement of radiation treatment⁵⁷. Other documented barriers to radiotherapy in our environment include power outages, poor equipment maintenance and incessant strike actions on the part of health personnel⁵⁷. Radiation treatment spans curative, adjuvant or palliative uses. Our experience has shown that the bulk of use for most patients is for palliative purposes especially after late presentation. Radiation therapy helps in palliative treatment of metastatic cancer to bone, brain etc. it also help in haemostasis of bleeding fungating breast cancers. Among patients presenting with late stage breast cancer in our environment, pain has been described as a major cause of morbidity⁵⁸.

The figures deduced from our patient outcomes reflects the realities of the challenges we are faced. Only fourteen people (5.8%) are alive and on follow up with 45% confirmed dead. The status of the rest of the patients cannot be reliably ascertained. Possible reasons for discontinuation of therapy may include far advanced disease with significant multi-organ metastasis and anaemia⁵⁹ and even unaccounted mortality.

In conclusion, Breast cancer still remains a significant source of morbidity in affected patients in our environment, despite much progress in the multi-modal diagnosis and management of this disease. A lot of work still needs to be done in providing good quality affordable cancer screening and treatment modalities in our institution.

LIMITATION OF STUDY

A major limitation with this study was access to patient data and poorly kept records. This was especially experienced with regards immunohistochemistry result retrieval and treatment details among the patients referred for radiation therapy to other centers.

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