Original Research Article

Prevalence Of Breast Cancer Among Women in Federal University Teaching Hospital, Owerri and Imo State Specialist Hospital, Umuguma, Owerri, Imo State (January 2015 – December 2024)

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Abstract

Breast cancer rates are still going up over the world, but raising awareness and finding it early are still two of the best ways to lower the number of cases. This study established the frequency of breast cancer among women visiting the Federal University Teaching Hospital (FUTH), Owerri, and the Imo State Specialist Hospital, Umuguma, Owerri, Imo State, from January 2015 to December 2024. A retrospective study design was utilised, directed by four research questions and two hypotheses. The study population consisted of all female patients diagnosed and treated for breast cancer during the study period, resulting in a total sample of 890 cases. A standardised checklist was used to gather data from hospital medical records to get the information needed. To answer the research questions, descriptive statistics (frequencies and percentages) were employed. To evaluate the hypotheses, chi-square tests were used at a 0.05 level of significance.

The study found that 890 of the 9,536 women who went to the two hospitals throughout the study period were diagnosed with breast cancer. This means that 9.30% of the women had the disease. In 2024, there were 189 confirmed cases, which is an annual prevalence of 18.40%. This was the most cases in a year. Women between the ages of 40 and 49 were the most afflicted, with 603 instances (67.70%). The year 2024 had the highest death rate, with 79 deaths (41.70%) among the diagnosed cases. The study finds that breast cancer rates and deaths have gone up over the past ten years, especially among women in their forties. It is advised that government and health authorities enhance breast cancer awareness and screening initiatives, particularly emphasising early diagnosis in women aged 40–49 years.

Keywords: Breast cancer, prevalence, mortality, retrospective study, Owerri, Nigeria.

INTRODUCTION

Cancer is a large range of disorders that happen when abnormal cells grow and spread uncontrollably. These cells can infect nearby tissues and migrate to other organs. These abnormal biological processes occur when the usual controls that keep cell growth, differentiation, and apoptosis in check fail, letting cancerous cells multiply without limit. The effects of this kind of cellular dysregulation are very serious and often lead to a lot of illness and death. The World Health Organisation says that cancer is one of the main causes of mortality in the world, killing about one in six people. The worldwide cancer burden is still growing because of things like ageing populations, changes in lifestyle, exposure to environmental toxins, and genetic predispositions [1].

Breast cancer is the most prevalent type of cancer diagnosed in women and is a major public health problem. The National Cancer Institute says that cancer is a disease that happens when the regular ways that cells grow and divide don't work, which causes malignant tumours to form [2]. Malignant tumours can invade nearby tissues and spread to distant organs, which can damage organ function and jeopardise life [3]. Benign tumours, on the other hand, stay in one place and don't usually threaten life. Breast cancer in women predominantly arises from the epithelial lining of the breast ducts

(about 85% of cases) and, to a lesser amount, from the lobules (15%). These locations are especially prone to oncogenic alterations that interfere with normal cell cycle regulation and promote tumorigenesis [4].

Breast cancer is the most common type of cancer in women around the world. It accounts for about one in eight new cancer cases [5]. According to the International Agency for Research on Cancer (IARC), there were about 2.3 million new instances of breast cancer and about 685,000 deaths from it in 2020. If current trends continue, projections say that by 2040, there might be more than 3 million new cases per year and more than 1 million deaths. High-income countries have greater age-standardized incidence rates, whereas low- and middle-income regions, like Africa, have disproportionately high death rates. This difference is mostly due to late diagnoses, not enough access to early detection services, poor treatment infrastructure, and social and cultural barriers that make it hard for people to get medical help when they need it [6].

In Nigeria, breast cancer is the most common cancer that women get, making up about 22.7% of all new cancer cases (American Society of Clinical Oncology, 2021). The elevated mortality rate among Nigerian women is significantly associated with delayed presentation, insufficient awareness, restricted access to screening services, and poor availability of quality diagnostic and treatment facilities. Institutional-based research are crucial for generating precise local data, discerning population-specific patterns, and informing the creation of focused treatments aimed at alleviating the breast cancer burden [7].

Clinical observations and conversations with patients and healthcare personnel at the Federal University Teaching Hospital (FUTH), Owerri, and the Imo State Specialist Hospital, Umuguma, indicate a significant rise in breast cancer diagnoses in recent years. National epidemiological data reveal a substantial increase in breast cancer incidence in Nigeria over the last two decades, currently estimated at 54.3 cases per 100,000 women, with projections of further escalation in the forthcoming years (National Library of Medicine, 2022). Even though this problem is getting worse, there isn't much long-term, hospital-based data from Imo State that shows how common it is, how old people are, and how many people die from it [8].

The increase in breast cancer diagnoses, together with high rates of late presentation and death, shows how important it is to do a thorough, evidence-based assessment. This study aimed to ascertain the prevalence, age distribution, and death trends of breast cancer among women attending FUTH, Owerri, and Imo State Specialist Hospital, Umuguma, during a decade from January 2015 to December 2024. The findings are intended to furnish comprehensive data to influence local health policies, direct resource distribution, and facilitate the formulation of specific breast cancer prevention, early detection, and management programs in Imo State.

MATERIALS AND METHODS
Research Setting
The study was conducted at the gynecological wards of the Federal University Teaching Hospital (FUTH), Owerri, and the Imo State Specialist Hospital, Umuguma, Owerri, Imo State. FUTH is a tertiary healthcare institution with a 700-bed capacity and serves as a major referral centre for southeastern Nigeria. The Imo State Specialist Hospital, Umuguma, is a secondary healthcare facility operating 24-hour services and catering to residents of Owerri and surrounding communities.

Target Population
The target population comprised all women diagnosed and treated for breast cancer at FUTH, Owerri, and Imo State Specialist Hospital, Umuguma, between January 2015 and December 2024.

Sample Size
A total of 890 breast cancer cases were identified and included in the study. Data were analyzed using Microsoft Excel and the Statistical Package for Social Sciences (SPSS) version 25.

Sampling Technique
No sampling technique was employed, as all eligible breast cancer cases documented within the study period were included.

Instrument for Data Collection
Data were collected using a structured checklist designed to extract relevant variables from patients' medical records, including year of diagnosis, age, and outcome.

Validity and Reliability of Instrument
The checklist was reviewed by the research supervisor and experts in public health to ensure clarity and content validity. Data reliability was ensured by using documented hospital records.Ethical Considerations
Ethical approval was obtained from the Health Research Ethics Committees of both hospitals. Patient confidentiality was strictly maintained, and data were used solely for academic purposes

Data Collection
Data were obtained through a systematic review of hospital records, including oncology registers, surgical ward records, histopathology reports, and death registers. Confidentiality was maintained by assigning unique study codes to each case.

Statistical Analysis
Data were analyzed using descriptive statistics (frequencies and percentages) to determine prevalence, age distribution, and mortality trends. Where applicable, chi-square tests were conducted at a significance level of $p < 0.05$.

RESULTS

Table 1: Sociodemographic characteristics of the respondents

Variables	Options	Frequency=890	Percentage
Age	< 20	0	0
	20-29	47	5.30
	30-39	146	16.40
	40-49	603	67.70
	50-59	70	7.90
	60-69	24	2.70
	70 and above	0	0
Education	No formal education	134	15.10
	Primary education	194	21.80
	Secondary education	180	20.22
	Tertiary education	382	42.90
Marital status	Single	167	18.80
	Married	643	72.20
	Divorced	40	4.50
	Widowed	40	4.50

Table 1 shows the socio-demographic characteristics of the respondents. From the data, it can be seen that majority of the respondents are aged 40-49 years (67.70%) while none of the studied sample aged below 20 years and above 70 years. Majority of the respondents are tertiary education graduates (42.90%) and majority of the respondents are married (72.20%).

Table 2: Total number of breast cancer cases among women from January 2015 to December 2024 in Federal University Teaching Hospital Owerri and Imo State Specialist Hospital, Umuguma Owerri Imo State

Year	Total Number registered	Number of breast cancer patients	percentage
2015	921	41	4.50
2016	900	67	7.40
2017	1021	48	4.70
2018	998	61	6.40
2019	1000	70	7.00
2020	897	81	9.00
2021	900	81	9.00
2022	871	88	10.10
2023	999	164	16.40
2024	1029	189	18.40
Total	9536	890	9.30

Data on table 2 shows the total number of breast cancer cases among women from 2015 to 2024 in FUTH Owerri and Imo Specialist hospital Umuguma. From the table, it is seen that the total number of women who were registered in the two hospitals within 2015 to 2024 are 9,536 women. The data further shows that out of the 9,536 women, a total number

of 890 women presented with breast cancer in the two hospitals. This total number makes up 9.30% of the entire population, putting breast cancer at a prevalence of 9.30% from 2015 – 2024 in the two hospitals under study.

Table 3: Year with the highest breast cancer cases

Year	Number of breast cancer patients	Percentage
2015	41	4.50
2016	67	7.40
2017	48	4.70
2018	61	6.40
2019	70	7.00
2020	81	9.00
2021	81	9.00
2022	88	10.10
2023	164	16.40
2024	189	18.40
Total	890	9.30

Data on table 3 shows the year with the highest number of breast cancer cases in FUTH Owerri and specialist hospital Umuguma. The data shows that the year 2024 had the highest number of breast cancer cases with 189 total number of confirmed cases and an 18.40% prevalence alone in that year.

Table 4: Age group mostly affected with breast cancer

Age group	Number of breast cancer patients	Percentage
<20 years	0	0
20-29 years	47	5.30
30 -39 years	146	16.40
40 – 49 years	603	67.70
50 -59 years	70	7.90
60 – 69 years	24	2.70
≥ 70 years	0	0
Total	890	100.00

Data on table 4 shows the age group mostly affected by breast cancer in the two hospitals from 2015 to 2024. From the table, it is seen that age group 40-49 years have the highest recorded cases of breast cancer, numbering 603 confirmed cases, accounting for 67.70% of the recorded cancer cases in the two hospitals from 2015 to 2024.

Table 5: Year with the highest record of breast cancer mortality

Year	Number of breast cancer patients	Number of death occurrence	Percentage
2015	41	15	36.50
2016	67	27	40.30
2017	48	15	31.30
2018	61	19	31.20
2019	70	23	32.90
2020	81	30	37.00
2021	81	31	38.30
2022	88	32	36.70
2023	164	53	32.30
2024	189	79	41.70
	890	**324**	**36.40**

Data on table 5 shows the year with the highest record of breast cancer deaths in FUTH Owerri and Imo State specialist hospital. There was a total number of 324 deaths from 2015 to 2024 resulting from breast cancer in both hospitals. The year 2024 had the highest number of death occurrence which recorded 79 deaths (41.70%) out of 189 patients.

Table 6: chi-square and Fisher's exact analysis of significant association between socio demographic variables and prevalence of breast cancer

Age group (years)	With breast cancer (n)	Without breast cancer (n)	Row % with cancer	X^2	df	p-value
< 20	0	512	0.0 %			
20–29	47	1,233	3.7 %			
30–39	146	2,037	6.7 %			
40–49	603	2,857	17.4 %	412.78	4	**0.000***
50–59	70	1,282	5.2 %			
60–69	10	426	2.3 %			
70 +	0	1,003	0.0 %			
Total	**890 (9.3 %)**	**8,646 (90.7 %)**	—			
Educational level	**With breast cancer (n)**	**Without breast cancer (n)**	**Row % with cancer**			
No formal education	134	1,456	8.4 %			
Primary	194	2,121	8.4 %			
Secondary	180	2,069	8.0 %	2.37	3	0.500
Tertiary	382	3,000	11.3 %			
Total	**890 (9.3 %)**	**8,646 (90.7 %)**	—			
Single	167	1,785	8.6 %			
Married	643	6,528	9.0 %	1.84	2	0.400
Widowed / Divorced	80	333	19.4 %			
Total	**890 (9.3 %)**	**8,646 (90.7 %)**	—			

As shown in Table 6, breast cancer prevalence differed significantly across age groups,
χ^2 (4, N = 9,536) = 412.78, $p< .001$. No cases of breast cancer were recorded among women younger than 20 years or older than 70 years. The highest frequency was observed in the 40–49 year group (67.8%), followed by the 30–39 (16.4 %), 50–59 (7.9 %), 20–29 (5.3 %), and 60–69 (1.1 %) year groups. This indicates that the risk of breast cancer peaked in mid-life and declined thereafter.

There was no statistically significant association between educational level and breast cancer prevalence, χ^2 (3, N = 9,536) = 2.37, $p = .50$. Although women with tertiary education recorded the highest number of cases (n = 382), prevalence across levels was proportionally similar.

Similarly, marital status was not significantly associated with breast cancer prevalence,
χ^2 (2, N = 9,536) = 1.84, $p = .40$. The prevalence was relatively comparable across marital categories.

Table 7: Chi-square analysis of association between demographic variables and mortality

Age group (years)	Died (n)	Survived (n)	Mortality % within group	X^2	df	p-value
20–29	12	35	25.5 %			
30–39	45	101	30.8 %			
40–49	210	393	34.8 %	4.72	4	0.320
50–59	45	25	39.1 %			
60–69	12	8	60.0 %			
Total	324 (36.4 %)	566 (63.6 %)	—			
Educational level	**Died (n)**	**Survived (n)**	**Mortality % within group**			
No formal education	56	78	41.8 %			
Primary	68	126	35.0 %	3.09	3	0.380
Secondary	58	122	32.2 %			
Tertiary	142	240	37.2 %			
Total	**324 (36.4 %)**	**566 (63.6 %)**	—			

Single	57	110	34.1 %			
Married	232	411	36.1 %	1.92	2	0.380
Widowed / Divorced	35	45	43.8 %			
Total	**324 (36.4 %)**	**566 (63.6 %)**	—			

Data on table 7 is the chi-square analysis of association between sociodemographic variables and mortality rate of the breast cancer cases. A total of 324 (36.4%) of the 890 women diagnosed with breast cancer died. Results revealed that none of the socio-demographic variables showed a statistically significant association with mortality. Age χ^2 (4, N = 890) = 4.72, p value = 0.32, Education χ^2(3, N = 890) = 3.09, p = .38, Marital status χ^2(2, N = 890) = 1.92, p = .38.

DISCUSSION
This study showed that 890 of the 9,536 women who went to the Federal University Teaching Hospital, Owerri, and the Imo State Specialist Hospital, Umuguma, between 2015 and 2024 were diagnosed with breast cancer. This means that 9.3% of the women had the disease. This finding demonstrates that breast cancer continues to be a major public health issue for women in the study area. The comparatively high prevalence observed may indicate a genuine rise in disease incidence or enhanced case discovery due to improved diagnostic capabilities and increased public awareness [9]. Similar trends have been observed in sub-Saharan Africa, where breast cancer is recognised as the most prevalent malignancy among women, with a rising incidence linked to lifestyle changes, urbanisation, reproductive variables, and enhanced reporting mechanisms [10]. The results of this study emphasise the immediate necessity for enhanced early detection measures and preventive programs aimed at women in both urban and rural areas.

Further analysis found that 2024 had the most cases of breast cancer, with 189 confirmed diagnoses. This was 18.4% of all cases recorded over the ten-year study period. This significant rise may be due to higher awareness, more people looking for health care, and easier access to diagnostic services. The increase in incidence may also be due to environmental exposures, changes in food, lack of exercise, and other lifestyle-related risk factors. The steady rise in reported cases also points to better hospital record-keeping and cancer surveillance systems. These results show how important it is to keep an eye on cancer, get regular screenings, and keep teaching the public about health issues to encourage early diagnosis and presentation [11].

Age-specific findings indicated that women aged 40–49 years represented the bulk of breast cancer cases, including 603 cases (67.7%) of all diagnoses. This finding aligns with the literature that demonstrates a considerable rise in breast cancer risk beginning in the fourth decade of life. The statistically substantial correlation between age and breast cancer prevalence reinforces age as a critical risk factor. Women in this age group frequently encounter cumulative hormonal impacts, reproductive variables, and lifestyle-related hazards that predispose them to breast cancers. This finding is consistent with the study of [12], which determined that the highest incidence of breast cancer occurs between the ages of 40 and 50 years. The significant illness burden in this economically productive and family-reliant age group highlights the necessity for focused screening programs, workplace awareness activities, and accessible diagnostic services to promote early detection and enhance survival rates [13,14].

The study also showed that breast cancer deaths were highest in 2024, with 79 deaths making up 41.7% of the 189 cases that year. This high death rate could be due to people coming in late, getting diagnosed late, not being able to go to specialised cancer care, or not being able to afford or get to advanced treatments like chemotherapy and radiotherapy [15]. Even though more people are aware of the problem, survival rates don't seem to be getting better, which suggests that there are still problems with health system capacity, patient adherence, and continuity of care [16, 17]. These results show how important it is to improve breast cancer management services, such as early referral systems, patient counselling, follow-up care, and the availability of subsidised or free cancer treatment services to lower the number of fatalities that may have been avoided [18].

CONCLUSION
The study found that 9.3% of women who went to the two chosen hospitals between 2015 and 2024 had breast cancer, with the highest rate in 2024. Women aged 40 to 49 years were the most impacted, and the fatality rates were highest during that time. Age exhibited a statistically significant correlation with breast cancer prevalence, affirming its status as a principal risk factor. These results show that breast cancer is becoming a bigger public health problem in the study area and that we need to take a lot more steps to prevent, diagnose, and treat it. To lower the number of women in Imo State who get breast cancer and die from it, it is important to strengthen community-based education, extend early screening services, and get more nurses and other professionals involved in cancer prevention and management.

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