

Perception of Breast Cancer Among Women Sufferers and Its Influence on Their Uptake of Immunohistochemistry Services in Imo State Tertiary Hospitals, Nigeria

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ABSTRACT

Background: Breast cancer is the cancer in which women are most frequently diagnosed, making it a significant global public health issue. Although advanced nations have a higher incidence of breast cancer, poor nations like Nigeria have the highest rates of morbidity and mortality from the disease.

Objective: This study explored how breast cancer was perceived in Imo State among women with breast cancer and how it affected people's usage of Immunohistochemistry (IHC) technique to diagnose and manage their condition.

Methodology: Descriptive study methodology for the investigation, and 121 participants were chosen at random from the 891 total population. The respondents were chosen through a systematic sampling procedure. Structured questionnaire was used as the data collection tool, and the statistical software for social science (SPSS) was used to analyze the data.

Results: The mean age of the 121 participants in study was 45.2 ± 0.7 years. Many of the perception factors about breast cancer disease and its treatment recorded positive results with high mean score of 4 points out of a 5-point scale. Despite overall high positivity of perception of breast cancer treatment/management (4.09 ± 0.97) among our respondents, it could not be counted to be as a predictor of IHC service uptake, as it associated weakly.

Conclusion: In this study, the consumption of IHC services was influenced by the respondents' perception of the disease and cannot be used as an impact factor on non-utilization.

Keywords: Breast; cancer Uptake, immunohistochemistry, age, education, perception

INTRODUCTION

Female breast cancer is a major global public health problem. It is the most commonly diagnosed cancer in women with an estimated 2.26 million new cases diagnosed worldwide in 2020¹. The incidence and mortality rates are increasing rapidly with over 500,000 deaths recorded each year, making it the leading cause of cancer death in women². Breast cancer

accounts for 25% of all cancers in females worldwide. In Africa, the incidence of breast cancer is relatively low compared to the western developed countries, however, morbidity and mortality rates are alarmingly high, reflecting the relatively poor survival from the disease in the continent^{3,4,5}. The American Cancer Society (ACS) estimated an average of 93,600 new cases of breast cancer annually in Africa with about 50,000

deaths. In Nigeria, breast cancer is recognized as major cause of morbidity and mortality with incidence rate ranging from 36.3 to 50.2/100,000 women⁶. Also, in Imo state breast cancer has been reported to be the most common cancer among women⁷. The mainstay of breast cancer management and treatment approach is surgery when the tumor is localized, followed by chemotherapy (when indicated), radiotherapy and targeted hormonal therapy (when hormone receptors status is known)⁸. However, of these four approaches, the use of hormonal therapy stands out because of its increased survival advantage. It has been estimated to be responsible for 35-72% of the reduction in mortality⁹. The use of hormone therapy can only be employed when hormone receptors status of a breast cancer patient is known and this can only be achieved through immunohistochemistry (IHC). Immunohistochemistry is a technique that combines anatomical, immunological and biochemical techniques to identify discrete tissue components by the interaction of target antigens with specific antibodies tagged with a visible label. Immunohistochemistry (IHC) has an expanding role in the diagnosis and management of mammary disease¹⁰. Significant breast cancer-related morbidity and mortality in Nigeria may not be unrelated to a number of variables, such as patient attitudes toward the diseases well as the use of immunohistochemistry diagnostic service, and other socioeconomic variables. Therefore, we investigated influence of breast cancer among women on immunohistochemistry service uptake Imo state tertiary hospitals.

MATERIALS & METHODS

The research adopted descriptive study to determine the perception by breast cancer patients and uptake of immunohistochemistry services in Imo State, with the view of understanding their inter-relationship between the two factors. The study was carried out at the two tertiary hospitals in the Imo state, Nigeria which are

Federal University Teaching Hospital, Owerri (FUTHO), and Imo State University Teaching hospital, Orlu (IMSUTH). Imo State is one of the 36 States in Nigeria.

The selection of participants for the study was based on the systematic sampling techniques, as it is not easy to reach out to all participants, and work with them at the same time, within the research period. This entails selection of members at regular sample interval in accordance with Gravetten and Forzano (2012). The consenting participants who signed the consent form were given a structured questionnaire aligned with the objectives of our study with the aid of qualified research assistants, in order to collect data.

Permission and clearance to carry out this study was obtained from the Ethical Review Committees of Federal University Teaching Hospital, Owerri and Imo State University Teaching Hospital, Orlu respectively. The Statistical analysis in this study was performed, using the Statistical Package for Social Sciences (SPSS) version 21.0, and descriptive and inferential data statistics deployed. Statistical significance was at 0.05.

RESULT

Socio-demographic profile

A study of 121 respondents with age range 24 – 78 and mean of 45.2 years. Table 1. shows that the socio-demographic profile in our study shows that more proportion of the respondents were between 40-49 years of age with a total number of 49 (40.5%), followed by the 30-39 years old and the 50-59 with total numbers 28(23.1%) and 24 (19.8%) respectively. The less than 20 years old were the least of all the age groups having 0(0%) followed by 20-29 years old having 10 (8.3%) members each. All the women had formal education with majority 82(67.8%) having studied up to tertiary education level, 36(29.8%) have secondary education level and 3(2.5%) have primary education level of education. The group was dominated by married women 92(76%), while 16(13.2%) of them were single

women, and the rest were either divorced (2.5%) or separated (8.3%).

Reasonable number of the subjects was either public servants (47.1%) or was engaged in business or trading activities (35.5%). Also, 13.2% were unemployed or job seekers.

In terms of monthly income 34 (28.1%) earn below the national minimum wage of ₦30,000 per month, 25 (20.7%) earn between ₦50,000-69,000, while only 8 (6.6%) earn at least ₦110,000. The

respondents were all Christians, dominated by Catholic denomination (60.3%), while 17.4% and 19.8% were respectively of Protestants (Anglican, Methodist, etc) and Pentecostal.

A total of 47 (38.8%) have been diagnosed of breast cancer for 12 – 17 months, and 25 (20.7%), were within 6 -11 months. Those that were diagnosed of the disease within less than 6 months were 13.2%, while 19.8% were diagnosed within 24 months and beyond.

Table 1: Distribution of respondents by socio-demographic profile (n=121)

Socio-demographic Profile	Frequency	Percent (%)
Age (in years)		
Less than 20	0	0
20-29	10	8.3
30-39	28	23.1
40-49	49	40.5
50-59	24	19.8
60-69	10	8.3
Total	121	100.0
Education		
Primary	3	2.5
Secondary	36	29.8
Tertiary	82	67.8
Total	121	100.0
Marital Status		
Single	16	13.2
Married	92	76.0
Divorced	3	2.5
Separated	10	8.3
Total	121	100.0
Occupation		
Unemployed/Applicant	16	13.2
Public Servant	57	47.1
Business/trading	43	35.5
Farming	4	3.3
Others	1	0.8
Total	121	
Monthly Income in Naira (₦)		
Less than 30,000	34	28.1
30,000- 49,000	20	16.5
50,000 -69,000	25	20.7
70,000 - 89,000	12	9.9
90,000 -109,000	22	18.2
110,000 and above	8	6.6
Total	121	
Religious Denomination		
Catholic	73	60.3
Protestant	21	17.4
Pentecostal	24	19.8
Faith Tabernacle	3	2.5
Other Religion (Islam, African Trad, Religion etc)	0	0.0
Total	121	
When was the diagnosis of breast cancer made		
Less than 6 months	16	13.2
6-11 months	25	20.7
12-17 months	47	38.8
18-23 months	5	4.1
24 months and above	24	19.8
Not sure	4	3.3
Total	121	

Perception of Breast Cancer and its Treatment/management

The results of the perception of respondents of breast cancer disease and its treatment/management in Table 3, demonstrated high positive results with mean score of 4 points out of a 5-point scale, and standard deviation 0-1.5 indicating that the deviations from the mean were not of wider variations. The overall mean value of score points is 4.09 ± 0.97 showing that the participants generally recorded strong positive perception about breast cancer and its management.

The line graph of the perception of the respondents in Figure 1, shows that the mean values of each statement of perception maintained relatively stable at between 3.0 and 5. The strongest mean score point was

obtained from the perception that early detection of breast cancer can increase the survival rate (Mean: 4.61, St. Dev: 0.65). A total of 82 (67.8%) and 33 (27.3%) of the participants respectively strongly agreed and agreed to that view while only one person (0.8 percent) disagreed or strongly disagreed, and 5 (4.1%) showed indifference.

Other responses with high mean score on positive perception were on the perceptions that “breast cancer can be treated and hence not a death sentence” (4.40 ± 0.67 : SA 48.8%, A 44.6%), “the adverse effect of breast cancer treatment on an individual’s physical beauty is not permanent” (4.28 ± 0.78 : SA 46.3%, A 34.7%), and “breast cancer is just like

Table 2: Perceptions of Breast Cancer Disease and its Treatment/ Management.

SN	Statement for Perception	SD	D	I	A	SA	mean	St. Dev
		(%)	(%)	(%)	(%)	(%)		
1	Breast cancer is not a spiritual sickness that is caused by an enemy	7 (5.8)	-	18 (14.9)	29 (24.0)	67 (55.4)	4.23	1.09
2	Breast cancer is just like every other cancer that women suffer	2 (1.7)	2 (1.7)	11 (9.1)	52 (43.0)	54 (44.6)	4.27	0.83
3	Breast cancer can be treated and hence not a death sentence	-	2 (1.7)	6 (5.0)	54 (44.6)	59 (48.8)	4.40	0.67
4	Having a mother or sister with breast cancer does not mean that you are likely to get the disease	19 (15.7)	13 (10.7)	27 (22.3)	23 (19.0)	39 (32.2)	3.41	1.44
5	Early detection of breast cancer can increase the survival rate	1 (0.8)	-	5 (4.1)	33 (27.3)	82 (67.8)	4.61	0.65
6	breast cancer will get worse if sufferers do not have additional/ follow-up test such as immunohistochemistry (IHC)	2 (1.7)	5 (4.1)	39 (32.2)	40 (33.1)	35 (28.9)	3.83	0.95
7	Although breast cancer treatment last for long period of time but the result is what is important	2 (1.7)	3 (2.5)	22 (18.2)	44 (38.8)	44 (38.8)	4.11	0.90
8	Breast cancer treatment process can be associated with discomfoting experience which is tolerable	3 (2.5)	1 (0.8)	27 (22.3)	54 (41.3)	40 (33.1)	4.02	0.90
9	Breast cancer treatment process can be associated with embarrassing body changes eg Alopecia (loss of hairs) but this does not affect the individual’s worth of life	-	-	31 (25.6)	41 (33.9)	49 (40.5)	4.15	0.80
10	Employing hormonal treatment option for breast cancer can result in an individual’s emotional and psychological stability	1 (0.8)	7 (5.8)	48 (39.7)	42 (34.7)	24 (19.8)	3.69	0.86
11	The adverse effect of breast cancer treatment on an individual’s physical beauty is not permanent	-	1 (0.8)	21 (17.4)	42 (34.7)	56 (46.3)	4.28	0.78
	Overall						4.09	0.97

Key: SD: Strongly disagree, D: Disagree, I: indifferent, A: Agree, SA: Strongly agree, St. dev: Standard deviations Note: Perceptions were all positive in all the items: perception above the overall mean score was considered as very strong positive perception.

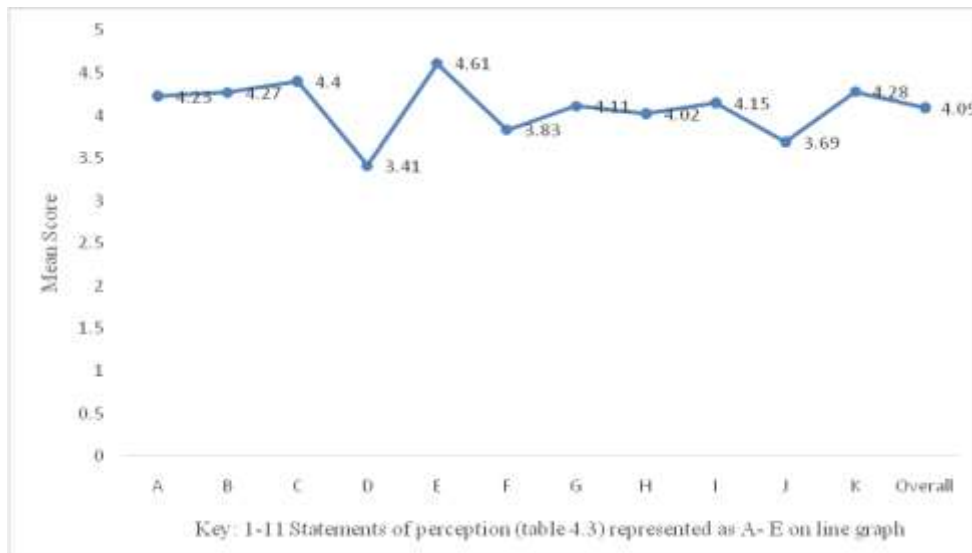


Figure 1: Line Graph showing mean Perception of Breast Cancer

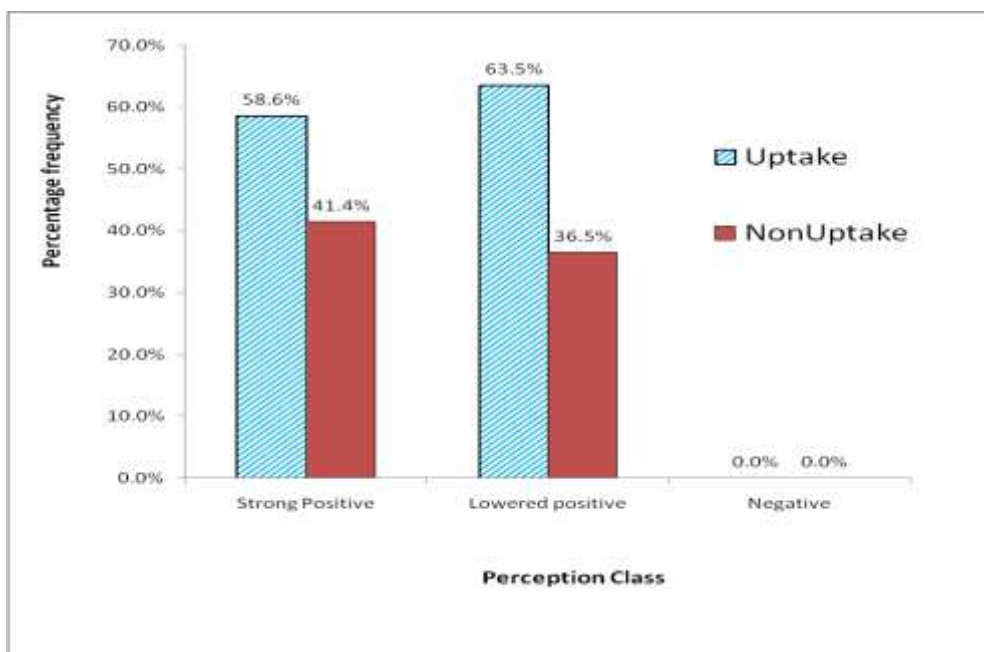


Figure 2: Frequency of uptake for IHC services at Positive perception: [Uptake was slightly higher at positive uptake (58.8%) than at strong positive uptake (63.5%), but the difference was not found significant at 5% ($P=0.583$, Chi-square = 0.03)].

Table 3: Perception in relation to IHC Services Uptake

Regression Parameter	Output
Coefficient (Standard Error)	0.233 (0.379)
Wald (d.f)	0.346 (1)
P	0.557
OR (95% C.I.for OR)	1.23 (0.595 – 2.623)

every other cancer that women suffer” (4.27 ± 0.83 : SA 44.6%, A 43.0%). More than half of the respondents 67(55.4%) strongly agreed that breast cancer is not a spiritual sickness that is caused by an enemy, only 7 (5.8%) disagreed strongly while 18 (14.9%) were indifferent.

The lowest mean score point was obtained on “having a mother or sister with breast cancer means you are likely to get the disease” (3.41 ± 1.44), where 19% and 32.2% respectively agreed and strongly agreed; and as well, 10.7% and 15.7% in the same order disagreed and strongly disagreed. The largest proportion showed indifference in perception was from respondents to “employing hormonal treatment option for breast cancer can result in an individual’s emotional and

psychological stability”, at 39.7% with mean score 3.69 ± 0.86).

DISCUSSION

The participants in the present study recorded strong positive perception about breast cancer and its treatment/management. There was strong perception that early detection of breast cancer can increase the survival rate, breast cancer can be treated and hence not a death sentence, the adverse effect of breast cancer treatment on an individual's physical beauty is not permanent and that breast cancer is just like every other cancer that women suffer.

The high level of perception about breast cancer disease and its treatment or management is not totally reflective to the level of uptake as it could not significantly influence the IHC services uptake in this study. This is not expected because greater number of respondents ought to seek IHC uptake due to their increase level of perception about breast cancer. However, this may have resulted due to chance. Similarly, perception was not significant in another Nigerian study despite that women who showed poor perception about the risk of the disease were more likely to accept available services against the disease in the study (Mandong, et al., 2022).

CONCLUSION

The perception of breast cancer/its treatment, despite high degree of positivity does not count as a predictor of IHC service utilization.

Regression output between perception and uptake for IHC services, perception showed positive coefficient (0.223) with uptake, indicating that any one positive change in perception is related to 0.223 rise in uptake. The odds ratio (OR=1.23) indicates that any one increase in perception is associated with 1.23 chance of uptake among the study group. Despite strong perception among respondent, there was no significant relationship between it and IHC services uptake.

Declaration by Authors

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