BARRIERS TO EARLY PRESENTATION OF BREAST CANCER AMONG WOMEN IN ONDO STATE, NIGERIA

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ABSTRACT

The study aimed to determine the factors that constitute barriers to early presentation among women with breast cancer in Ondo State, Nigeria. A prospective cross-sectional study was conducted at the surgical outpatient department of the University of Medical Sciences Teaching Hospital complex, Akure over a period of three years between May 2018 and April 2021. A pre-tested interviewer administered structured proforma and a medical record data extraction tool were used to address the objective of the study. Then, statistical analysis done; bivariate and multivariate logistic regression were employed to analyze the association between dependent and independent variables. The 225 patients studied had a mean age of 40.2 (SD = 10.80), and the peak age category was 35–42. The majority, 139 (89 %) patients were delayed by more than 3 months after noticing symptoms; while only 17 (11%) patients sought attention within 3 months of noticing symptoms of breast cancer. There was a significant association between patients' delay and lack of social support (AOR = 8.12, 95 % CI 1.22–24.80, P = 0.002); (where P value <0.005 is significant). Delay presentation by patients with breast cancer is a very serious health problem that needs to be addressed urgently in Ondo State, Nigeria. The delay was significantly associated with lack of social support from close family members and health education programs regarding breast cancer should address social support, provide more information about the variability of breast cancer symptoms and encourage self-breast examination and clinical breast examination.

INTRODUCTION

Breast cancer is the most frequently diagnosed cancer in Nigeria. It is the most common malignancy in women and the leading cause of cancer deaths worldwide.[1] Breast cancer is gradually becoming an urgent public health problem, especially in low-resource settings where the incidence rates have risen to about 5% each year.[2, 3] Globally, it is estimated that we had 2.1 million new cases of breast cancer, and 630,000 deaths, and in the category of women living with breast cancer, there were 18.3 million in the year 2018.[2, 4-6] There is a significant rise in the frequency rate of breast carcinoma worldwide; and the low-resource countries in sub-Saharan Africa are not also spared.[2, 7-9] Surprisingly, we are witnessing a rapid rise in the frequency of occurrence of breast cancer especially in communities that used to experience a low incidence of the disease.[2, 10-12] Studies performed in Cameroon, [2, 4,7,13] Nigeria, and Ghana, [2, 4,7,13,14] showed that breast cancer ranked the highest as the most commonly diagnosed malignancy amongst women.

Furthermore, burden of the disease is equally high in Central Africa, where the incidence of breast cancer was reported to be 27.9 per 100,000 in 2018.[2, 15, 16] Besides, some studies reported a progressive increase in the incidence of breast cancer in Nigeria from 15.3 per 100,000 in 1976 to 33.6 per 100,000 in 1992 to 52.0 and 64.6 per 100,000 in 2012 in Ibadan and Abuja respectively. [17-19] The researchers submitted that this rise might be related to the following factors i) improvement in the level of awareness, ii) changing socioeconomic profile of the country, and iii) partly due to the changing demographic profile of

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acquisition of Western lifestyle,[20] and iv) knowledge of breast cancer disease among women in general which encourage them to seek medical intervention in many health institutions.[17-19]

Delayed patient presentation refers to a prolonged interval between discoveries of initial symptoms and presentation to a health-care provider; which is typically defined as greater than 12 weeks as periods longer than this have been associated with poorer survival. [20, 21] There is a need for more awareness to encourage early presentation.[1] There is evidence that patients with delays of 12-26 weeks had significantly worse survival rates than those with delays of less than 12 weeks. [22, 23] Richards MA conducted a systematic review of 87 observational studies across the globe covering an estimated 101,954 patients to assess the impact of delays on survival. They found that delays of 3-6 months are associated with lower survival. [22, 23] In another study, designed to control for the lead-time bias, it was found that survival measured from both the date of diagnosis and onset of the patient's symptoms was worse in women with delays of over 12 weeks. [22, 24] Poverty, social culture, and lack of awareness about the disease and its management in our region may be the factors leading to misconception and false beliefs among these women resulting in delayed presentation. [22, 24] The patient delay has been associated with increased tumor size, more advanced stage at presentation, and poorer long-term survival, [21, 26, 27] and is a significant concern in low and middle-income countries (LMIC). Besides, the association between patient delay and socio-demographic factors, cancer knowledge, family history, and other factors have been widely studied. [21, 27]

Interestingly, the concept of this study was based on our observations during our routine clinical practice. It is written for publication with the intent to draw the attention of relevant stakeholders in our region. The findings of this research will help devise sustainable strategies for health education of the targeted population and remove barriers towards early presentation to the doctor and health facilities. Short-term outcomes will be an increase in early detection rate with a long-term impact of enhanced control over the disease and reduced overall burden in the region.

There is a paucity of published research studies on barriers to early presentation among women with breast cancer in Ondo State, and Nigeria in general.

OBJECTIVES OF THE STUDY

The study aims to determine i) the factors that constitute barriers to early presentation among women with breast cancer in Ondo State, Nigeria, and ii) the association of delayed presentation with age, family history, marital status, education, and socioeconomic status.

MATERIALS AND METHODS

A prospective cross-sectional study was conducted at the surgical outpatient department of the University of Medical Sciences Teaching Hospital, Akure complex over three years between May 2018 and April 2021. The hospital is a tertiary institution located in an urban area of Ondo state and serves as a referral center for the primary and secondary health facilities in Ondo state and other neighboring states like Ekiti, Osun, and Kwara, etc., and equally provides services to patients from all over the country but mostly within the Southwestern region of Nigeria. It is a center of excellence for Oncology and Surgical care in general.[27] The study analyzed all patients with histologically confirmed breast cancer who were managed in our hospital within the study period. Female patients 14 years and above with histological diagnoses of breast cancer were consecutively enrolled after written informed consent had been obtained. Patients who were too ill to give sufficient information were excluded from the study.

An adopted interviewer-administered structured proforma [28] was used to obtain the study variables. This tool was pre-tested and modified before final data collection was done. The variables included in data analysis were: age, occupation, education level, family size, religion, income, marital status, clinical stage of tumor, histological type, parity, place

of residence and family history, perceived barriers to early presentation, social support from spouses and time delays. Social support was taken as the perception and actuality that one is cared for, has assistance available from other people (spouse, relatives, and friends), and is part of a supportive social network. [29]

The delay was defined as more than 3 months from the appearance of symptoms to the consultation with a general surgeon. Data was stratified concerning studied socio-demographic variables i.e., age (<40 or >40 years), family history (positive or negative), menopausal status (pre or post-menopausal), education status (<9 or >9 school years) and socioeconomic status (poor-low [monthly income of NGN < 50000/month] or middle-high [NGN > 50000/month]). Five questions were asked of each patient that could reflect their understanding of the disease and which could be the likely reasons for their delayed presentation; questions were selected after review of the literature and keeping in view our social culture. The questions were 1. Did you present late because you were using alternative medicines at traditional healers? 2. Did you present late due to a painless lump; and Did you think it was not dangerous enough to consult the expert physician? 3. Did you present late due to not having enough resources to pay the doctor? 4. Did you feel shy to show breasts to male doctors with no access to female doctors in the surroundings? 5. Did you present late due to other reasons? The chi-square test was employed as a test of association between the variables and logistic regression analysis was performed to estimate adjusted odds ratios (OR) and confidence intervals (CI) of different socio-demographic variables and their independent influence on delayed presentation. STATA 12 statistical software was used for data analysis and the test of significance was set at $p < 0.005$. Ethical approval was obtained from the University of Medical Science Teaching Hospital Ethics and Research Committee.

RESULTS

The 225 patients studied had a mean age of 40.2 (SD = 10.80), a median age of 41, and the peak age category was 35–42. Also, the age range of the participants was from 15 to 89years. The majority of the patients, 140 (55.6 %) came from rural areas and only 112 (44.4 %) came from an urban setting. 212 (84 %) had clinical stage IV disease and 25 (10 %) had clinical stage III disease. The details of the characteristics of the study participants are shown in Table 1. An estimated 135 (60 %) patients were less concerned at the time they first noticed the symptoms of breast cancer, and only 25 (11 %) patients sought attention immediately after noticing breast cancer symptoms [Table 2]. The first symptoms noticed were a lump 74.2% (167/225), pain 10% (23/225), and 4% (9/225) had abnormal discharge. Interestingly, 24.4% (55/225) expressed concerns about the first symptoms but 15.6% (35/225) took the symptoms very seriously; while 4.4% (10/225) sought attention immediately. Moreover, the mean patient delay was 23.5 (SD = 22) months and the range was 1–124 months. The majority, 177 (78.7 %) patients delayed by more than 3 months after noticing symptoms while only 48 (21.3 %) patients sought attention within 3 months of noticing symptoms of breast cancer [Table 3].

In addition, of the 177 patients analyzed for cancer staging who delayed with the presentation, 88 (49.4 %) presented with stage IV, and 59 (33.4 %) were stage III; with a mean age of 48 (SD = 10.4). There was a significant association between patient delay and lack of social support (OR = 8.12, 95 % CI 1.22–24.80, P = 0.002). However, the association between age, occupation, religion, monthly income, and fear of surgery was not significant [Table 4]

TABLE 1: Characteristics of study participants

VARIABLE	NUMBER	PERCENTAGE
AGE GROUP (YEARS)	N=225	
<35	47	20.9
35-44	57	25.3
45-54	65	28.9
>55	56	24.9
Mean (SD)	40.2(10.8)	
Range	15-89years	
EDUCATION LEVELS	N=225	
Illiterate	70	31.2
Primary	64	28.4
Secondary	46	20.4
Tertiary	45	20.0
OCCUPATION STATUS	N=225	
Unskilled labor	40	17.8
Subsistence farmer	54	24.0
Unemployed	77	34.0
Formal education	31	13.2
High skilled labor	23	10.0
RESIDENCE	N=225	
Rural	119	52.9
Urban	106	47.1
RELIGION	N=225	
Muslim	80	35.6
Christian	111	49.3
Others	34	15.1
MARITAL STATUS	N=225	
Single	73	32.4
Married	122	54.3
Widowed/Divorced	30	13.3
FAMILY HISTORY OF BREAST CANCER	N=225	
No	180	80.0
Yes	45	20.0
HISTORY OF BENIGN BREAST DISEASE	N=225	
Yes	38	16.9
No	187	83.1
FIRST SYMPTOMS SEEN		
Lump	167	74.2
Others	58	25.8
Total	225	100.0
DELAY PRESENTATION (MONTHS)		
<3	73	32.4
>3	152	67.6
Total	225	100.0
Mean(SD)	5.8(7.6)	
Range	<1-62	
STAGE OF DISEASE(MANCHESTER)	(N=178)	
I	11	6.2
II	20	11.2
III	59	33.2
IV	88	49.4
TUMOR SIZE	(N=188)	
<2cm	29	15.4
2-5cm	105	55.9
>5cm	54	28.7
NODAL INVOLVEMENT	(N=178)	
NO	50	28.1
YES	128	71.9

TABLE 2: Clinical characteristics and awareness of participants

VARIABLE	NUMBER	PERCENTAGE
Have you heard of Breast Cancer		
YES	187	83.1
NO	38	16.9
TOTAL	225	100.0
Breast Self -Examination		
YES	155	68.9
NO	70	31.1
TOTAL	225	100.0
Co-Morbidities	70	31.2
YES	64	28.4
NO	46	20.4
TOTAL	45	20.0
	225	100.0
Family history of Breast Cancer		
NO	180	80.0
YES	45	20.0
TOTAL	225	100.0
Stage at Diagnosis	(N=178)	
I	11	6.2
II	20	11.2
III	59	33.2
IV	88	49.4
TOTAL	178	100.0
First changes of Breast		
Breast Lump	167	74.2
Others	58	25.8
TOTAL	225	100.0

TABLE 3: Further characteristics of study participants

VARIABLE	NUMBER	PERCENTAGE
AGE GROUP (YEARS)		
<35	47	20.9
35-44	57	25.3
45-54	65	28.9
>55	56	24.9
Total	225	100.0
EDUCATION LEVELS		
Illiterate	70	31.2
Primary	64	28.4
Secondary	46	20.4
Tertiary	45	20.0
Total	225	100.0
OCCUPATION STATUS		
Unskilled labor	40	17.8
Subsistence farmer	54	24.0
Unemployed	77	34.0
Formal education	31	13.2
High skilled labor	23	10.0
Total	225	100.0
MONTHLY INCOME (NAIRA)		
≤ 500,000	100	44
≥ 500,000	125	56
Total	225	100
RESIDENCE		
Rural	119	52.9
Urban	106	47.1
Total	225	100.0
RELIGION		
Muslim	80	35.6
Christian	111	49.3
Others	34	15.1
Total	225	100.0
MARITAL STATUS		
Single	73	32.4
Married	122	54.3
Widowed/Divorced	30	13.3
Total	225	100.0
FAMILY HISTORY OF BREAST CANCER		
No	180	80.0
Yes	45	20.0
Total	225	100.0
HISTORY OF BENIGN BREAST DISEASE		
Yes	38	16.9
No	187	83.1
Total	225	100.0
FIRST SYMPTOMS SEEN		
Lump	167	74.2
Others	58	25.8
Total	225	100.0
DELAY PRESENTATION (MONTHS)		
<3	73	32.4
>3	152	67.6
Total	225	100.0
Mean(SD)	5.8(7.6)	
Range	<1-62	
STAGE OF DISEASE	(N=178)	
(MANCHESTER)		
I	11	6.2
II	20	11.2
III	59	33.2
IV	88	49.4
Total	178	100.0
TUMOR SIZE	(N=188)	
<2cm	29	15.4
2-5cm	105	55.9
>5cm	54	28.7
Total	188	100.0
NODAL INVOLVEMENT	(N=178)	
NO	50	28.1
YES	128	71.9
Total	178	100.0

(1 US Dollar = 1,100Naira – as at December 2023)

TABLE 4: The results of logistic regression analysis on patient delay

VARIABLES	DELAY OUTCOME		OR (95% CI)	P VALUE
	NO DELAY	**DELAY**		
	NUMBER (%)	**NUMBER (%)**		
AGE GROUP (YEARS)				
<35	4 (6)	21 (22)	Reference	
35-44	12(42)	34 (29)	0.13 (002-1.34)	0.067
45-54	8(24)	26 (25)	0.24(0.02-1.88)	0.222
>55	5(17)	25 (24)	0.44 (0.03-3.00)	0.440
EDUCATION LEVELS				
Illiterate	1 (5)	12(44)	Reference	
Primary	4(20)	45(40)	1.02 (0.13–14.67)	0.834
Secondary	3(20)	50(42)	1.42 (0.12–15.22)	0.643
Tertiary	11(44)	24(18)	0.22 (0.03–1.59)	0.104
OCCUPATION STATUS				
Unskilled labor	4 (30)	32(24)	Reference	
Subsistence farmer	5 (26)	38(22)	2.24 (0.40–7.02)	0.432
Unemployed	8(47)	22(18)	0.32 (0.10–1.44)	0.205
Formal education	5(28)	13(18)	6.00 (0.55–57.01)	0.004
High skilled labor	2(8)	10(16)	5.00(0.22–47.70)	0.202
MONTHLY INCOME (NAIRA)				
≤ 500,000	8(42)	74 (58)		
≥ 500,000	14 (89)	88 (64)	0.96 (0.18–1.22)	0.196
RESIDENCE				
Rural	59(38)	48(38)	Reference	
Urban	46(32)	48(39)	6.00 (0.55–57.01)	0.452
RELIGION				
Muslim	58(45)	28(24)	Reference	
Christian	44(48)	38(32)	5.00(1.22-54.44)	0.442
Others	30(38)	14(18)	8.00(2.22-49.80)	0.384
MARITAL STATUS				
Single	66(40)	28(22)	Reference	
Married	88(32)	44(48)	8.00(1.22-24.80)	0.002
Widowed/Divorced	24(22)	10(7)	3.00(1.12-29.80)	0.242
FAMILY HISTORY OF BREAST CANCER				
No	88(45)	24(20)	Reference	
Yes	38(30)	18(12)	3.00(3.12-27.44)	0.004
HISTORY OF BENIGN BREAST DISEASE				
Yes	38(23)	8(20)	Reference	
No	78(48)	70(54)	6.33(4.24-64.80)	0.477
FIRST SYMPTOMS SEEN				
Lump	28(34)	64(54)	Reference	
Others	48(44)	22(18)	4.54(2.15-22.62)	0.617
STAGE OF DISEASE (MANCHESTER)				
II	20(35)	11(56)	Reference	
III	59(46)	33(46)	3.43 (0.68–34.44)	0.721
IV	88(54)	49(58)	11.18 (2.01–62.13)	0.004

(1 US Dollar = 1,100Naira – as at December 2023)

DISCUSSION

The study findings indicate that about (152) 67.6% of patients with breast symptoms had a delay of more than three months before presenting to a health professional. This finding is corroborated by other studies. [30-34] Recent studies have shown a range of 19% to 32% for patient delay. [30-34]

Interestingly, the degree of delay in patient presentation can be different from place to place. The difference might be related to the patients' health-seeking behaviors and the social environment where they live in. [35] One could submit that any intention to seek evaluation of breast symptoms is critically dependent on a complex scenario of personal and social factors on the perceived number of negative consequences of delaying diagnosis and on previous habits of healthcare utilization. [35]

Furthermore, socio-demographic factors and delayed presentation of breast cancer have been studied. Widowed and divorced women delayed in presentation in our study and the perceived reason might be because this category of women lack the motivation for healthcare-seeking behavior, especially about themselves; and equally do not have readily available social support for such practices.[21] From the foregoing, any individual with any breast mass or swelling should be able to perform a medical consultation up to 5 weeks from discovery to find out whether they have breast cancer. A time between presentation and diagnosis greater than 8 weeks was considered a diagnostic delay in this study.[34] Boycott of work as a result of disputes between healthcare workers and the government can be a major barrier to healthcare professionals providing timely care. Similar evidence was submitted by Olarenwaju *et al.* [34] However, this situation occurs only occasionally and was not the case for a considerable time before our study. An overwhelming majority of patients presented well over 3 months after noticing symptoms most likely because of how they perceived the 'seriousness' of the symptoms.

Several research studies submitted that most cancer in low and middle-income countries (LMIC) is detected at later stages of the disease.[36] In this study, there was a statistically significant association between patient delay and late stage at presentation; such influence of delay on disease stage has been well documented in other related studies. [21, 26] The patients who lacked social support from family members and spouses were more likely to delay. This finding is in keeping with our study and corroborated by another study done in Mexico in 2011 which submitted that social support is crucial for the materialization of the initial contact as well as for community care. [34, 37] Social support in this respect can be defined as "the perception and actuality that one is cared for, has assistance available from other people (spouse, relatives, and friends) and that one is part of a supportive social network." [29] In the LMIC that lacks comprehensive state welfare schemes, social support has therefore become a nightmare to patient-centered care;[29] and likely a major contributor to delay in seeking healthcare as found in our study.

Several studies have also described how the patient's concealment of symptoms might influence, the delay of medical help-seeking patterns while discussing them with friends and relatives; and invariably could negatively impact to a reasonable extent the decision to seek medical advice.[35] Moreover, a very peculiar attitude of our patients in our study revealed that patients with knowledge of available services were even more likely to delay in presentation for diagnosis and further care. This pattern is in contrast with the findings from other studies. [32, 36, 37] The adjudged reason for such a negative attitude might be related to misconceptions and myth as well as a lack of confidence in the eventual outcome even after visiting such a comprehensive healthcare facility.[35]

Surprisingly, age, education level, religion, occupation, monthly income, history of breast disease, family history of breast cancer, and nature of first symptom had no significant correlation with patient delay. This contrasts with findings from other studies where such above listed factors were strongly associated with delay, [38, 39] perhaps

we needed a larger sample size. Further randomized controlled trials would be required to elucidate the eventual outcome of such negative behavior and its impact on breast cancer care.

Limitations

1. Some participants could not recollect the exact time of onset of the first breast lesion.
2. Other patients forgot out-rightly the exact timing of the first medical advice was obtained.
3. Essentially, they failed to give any credible information on the type of health worker first consulted, the date of referral, and the treatment given. Even though, calendars were used as an aid to remind patients of the dates accordingly.
4. Our participants were patients attending the breast clinic at a tertiary hospital in the State capital- Akure, and environ; hence might not be representative of the Nigerian women population though the demographic analysis reflects the country's ethnic mix.
5. We focused on patient delay factors and not system factors, in some instances, it may be impossible to delink.
6. The nature, design of the study, and small sample size are equally limitations; hence a larger sample size, multi-centered study, and randomized controlled trials would impact significantly the eventual outcome of this study.

Conclusion

Delay presentation by patients with breast cancer is a very serious health problem that needs to be addressed urgently in Ondo State, Nigeria. The delay was significantly associated with lack of social support from close family members and health education programs regarding breast cancer should address social support, provide more information about the variability of breast cancer symptoms and encourage self-breast examination and clinical breast examination. Also, widespread community awareness, government-backed education on the signs and symptoms of breast cancer, and clear messages of the standard treatment of the

disease are critical; as such schemes will go a long way to improving the overall outcome. An increased trust in healthcare systems is highly beneficial and this may be addressed by developing partnerships with alternative and traditional healthcare practitioners.

Recommendations

1. There should be an aggressive public health campaign in communities to educate women of childbearing age group and to focus on the importance of carrying out breast cancer screening.
2. The community–based public health campaign that could provide adequate required support to breast cancer patients by both government and non-governmental organizations.
3. There is a need for political will on the part of our government to support the provision of infrastructures and diagnostic facilities for breast cancer screening services in our health facilities to enable health workers to detect breast cancer at its early stage.
4. An adequately subsidized or completely free breast cancer screening service would make a significant impact; such as allowing the services to be accessible to indigent patients in general.
5. The public health campaign should equally address social-cultural factors like ignorance, myth, misconception, and other related factors that may contribute to the delay in the early presentation of breast cancer in Ondo state and Nigeria at large.
6. A larger sample size, multi-centered study, and randomized controlled trials would impact significantly the eventual outcome of this study.

Ethics considerations

Institutional Ethical Approval was obtained. Confidentiality was ensured by not writing the names of patients on proforma by the Helsinki declaration. A copy of the written Approval is available for review by the Editor-in-Chief of this journal.

Competing interests

No conflict of interest declared.

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