

Knowledge and Attitudes about Breast Cancer among Women: A Wake-up Call in Nigeria

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Abstract

Preventable deaths resulting from the scourge of breast cancer has become alarming and worrisome in many societies in developing countries including Nigeria. Of much concern is the fact that breast cancer has continued to claim the precious lives of young, middle aged, old, educated and non-educated women irrespective of their religion, socio-economic background and socio-demographic characteristics. This study attempts to ascertain the knowledge and attitudes of women to breast cancer in Ogun State, Nigeria. The study adopts both primary and secondary data and relevant sociological theories to examine the level of knowledge and attitude of women towards breast cancer with the view of suggesting probable solutions and recommendations for policy.

Keywords: Knowledge, Attitudes, Breast cancer, Women, Nigeria

Introduction

Breast cancer is the most common cancer affecting 25.2% of women, and is also the second leading cause of cancer related deaths among women (Siegel, Ma, Zou, & Jemal, 2014). Almost half of breast cancer cases and 60% of breast cancer related deaths are estimated to occur in middle-and-low-income countries (Jemal, Bray, O'Brien, Ferlay, Center, & Parkin, 2012). Globally, the devastating effects on women diagnosed with breast cancer is appalling (Olowokere, Onibokun & Oluwatosin, 2012). Global cancer statistics shows increased global cases of breast cancer and the rise is occurring at a faster rate in populations of the middle-and-low-income countries which may be due to increase in population growth and aging (Siegel, *et al.*, 2014; Jemal, *et al.*, 2012).

Breast cancer is an aggressive disease affecting women, irrespective of their age category. Women are particularly vulnerable and susceptible to breast cancer and the risks increases with

advanced age (Omotara Yahya, Amodu, & Bimba 2012). The origin of breast cancer has not being fully unravelled, but is attributable to some inter-related factors of genetic, hormones, the environment, socio-biology and physiological factors (American Cancer Society, 2009).

In another report by Siegel, *et al.*, (2014) it was indicated that, deaths as a result of breast cancer in Nigeria reached 13,264 or 0.70% and the age adjusted Death Rate is 28.11 per 100,000 population, ranking Nigeria 4th in the world. Adebamowo and Ajayi (1999) stated that, breast cancer is the most common cancer in Nigeria. In 2005, breast cancer was found to be the most common in Nigeria (WHO, 2009). In the North-West geo-political zone of Nigeria, cancer of the breast is second to cancer of the cervix, while the cancer registry at the University College Hospital (UCH), Ibadan revealed that it is the leading malignancy among women (Afolayan, 2008; Ogunbiyi, Fabowale & Ladipo 2010). Also, in the North-central, breast cancer constitutes 22.41% of new cancer cases registered in 5 years and accounts for 35.41% of all cancers in women (Afolayan, Ibrahim, & Ayilara 2012). Breast cancer is undoubtedly the most dreaded cancer with lots of psychological impacts and one of the most popular malignancies that affects about one in every nine women (Etikan, Alkassin & Abubakar, 2016). It is a disease in which the malignant cells are developing in the tissue of the breast. Breast cancer is of two types, Lobular cancer which begins in many small sacks in the breast that produce milk and ductal cancer which develops in the tubes that carry milk from the lobules to the nipple (Dollinger, Rosenbaum, & Cable). It is also the type of cancer having the highest prevalence (45.7%) among the females in Nigeria and border Countries (Isa & Evren, 2016). Common signs and symptoms of breast cancer include change in a way the breast or nipple feels, change in how the breast or nipple seems and discharge of the nipple (Etikan *et al.*, 2016).

It is interesting to know that as debilitating as breast cancer disease is, majority of Nigerian women have little or no knowledge of the disease and even in situations where they are aware of the disease, their attitudes towards seeking health is negative causing their untimely or preventable death. It has been observed that certain socio cultural, religious, genetic and economic factors are responsible for this negative attitude. It is against this backdrop that this study seeks to ascertain the knowledge and attitude of women towards breast cancer in Ogun state. It also attempts to examine the factors responsible for breast cancer prevalence, thereby suggesting probable solutions and recommendations for policy decisions.

Literature Review and Theoretical framework

It has been argued that lack of basic knowledge and quality information delivery system for breast cancer is a great impediment to the life and well-being of women (Ramathuba, Ratshirumbi, & Mashamba, 2015). Breast cancer has been a major cause of death subtly killing women – especially those with little or no knowledge. This is compounded by lack of timely information about breast cancer and poor diagnostics screening methods for early detection (Shepherd & McInerney, 2006, Ramathuba *et al.*, 2015). As important as knowledge of breast cancer is, it is not sufficient unless socio-cultural factors are taken into consideration by the health professional providing direct health-care (Dow & Yarbrow 2007:111). Insufficient information concerning breast cancer has also been observed among the rural and urban dwellers in Nigeria; it is responsible for the poor perception of the ability to cure cancer earlier detected and the efficacy of screening tests (Omotara *et al.* 2012).

Furthermore, the lack of awareness on the issue of vulnerability and susceptibility associated with breast cancer discourage many women from seeking intervention early or associate the symptoms they are experiencing with breast cancer (Ramathuba *et al.*, 2015).

Level of awareness regarding how to perform simple life-saving diagnostic breast checks such as breast self-examination (BSE) further compounds the problem of late detection. Empowerment of women with information on BSE is of paramount importance, especially in countries without modern technologies for breast cancer screening (Shepherd & McInerney 2007). Most of the Nigerian rural communities lacked the required technological resources, but BSE can contribute greatly if women are informed about this technique and regular practice would reduce late presentation (Ramathuba *et al.*, 2015). Mammography screening may also be done to detect breast cancer in women that are asymptomatic. In spite of its limitations in LMCs due to the challenge of poor infrastructure, poverty, and inadequate manpower, it has been seen as the method of choice for screening and diagnosis which can significantly reduce breast cancer morbidity and mortality (Lawal, Murphy, Hogg, Iurhe, & Nightingale, 2015; Olasehinde Boutin-Foster, Alatisa, Adisa, Lawal, Akinkuolie, Adesunkanmi, Arije, & Kingham, 2017; Omidiji, Campbell, Atalabi, & Toyobo, 2017).

Certain socio-cultural factors also contribute to breast cancer prevalence in Nigeria. As opined by Akhigbe and Akhigbe (2012), health beliefs vary across culture, that the fatalistic consequence of cancer may discourage many to participate in health-promoting behaviours. This is because of the fact that illnesses or catastrophic events in this part of the world are attributed to a higher power (such as God), or they are meant to happen and cannot be avoided; as a result, fatalism becomes part of the person's world-view. Chronic conditions in many African societies are often associated with witchcraft and evil spirits. Cultural values and ethnic diversity have an impact on health beliefs, which may influence how rural women interact with the Western medication, especially conditions such as breast cancer. Some women delay seeking treatment because of fear of stigma concerning their daughters as it is believed that they also might be affected by breast cancer and might not be considered for a good marriage. Furthermore, it is believed that cancer is a death sentence from God (Dow & Yarbrow, 2007). This has continued to be an important factor of breast cancer prevalence in Nigeria and other Sub-saharan African countries.

The attitude of women towards breast cancer in this part of the world can be further put into perspective using the "health belief model".

The Health Belief Model

The Health Belief Model (HBM) is a tool that scientists use to try and predict health behaviors. The underlying concept of the original HBM is that: *health behavior* is determined by personal *beliefs* or perceptions about a disease and the strategies available to decrease its occurrence (Hochbaum, 1958). It is a psychological model that attempts to explain and predict health behaviors by focusing on the *attitudes* and *beliefs* of individuals.

Beliefs can be said to be some set of commonly shared opinion, perception, outlook and views about a particular thing or situation. Beliefs are therefore valuable resources and generalizations that people use to give themselves a sense of certainty and a basis for decision-making. Health beliefs have been defined as the personal conviction that influences health behaviors. An individual's belief in the effectiveness of a particular health intervention will determine to a large extent that individual's adoption of that medical intervention (Allo, Edewor & Imhonopi, 2018).

The HBM was spelt out in terms of four constructs representing the perceived threat and net benefits: perceived *susceptibility*, perceived *severity*, perceived *benefits*, and perceived *barriers*. These concepts were proposed as accounting for people's "readiness to act." An added concept, *cues to action*, would activate that readiness and stimulate overt behavior. A recent addition to the HBM is the concept of *self-efficacy*, or one's confidence in the ability to successfully perform an action. This concept was added by Rosenstock and others in 1988 to help the HBM better fit the challenges of changing habitual unhealthy behaviors, such as being sedentary, smoking, or overeating.

The Health Belief Model can be applied to a broad range of health behaviors and subject populations. It has been used for sick role behaviors, which refer to compliance with recommended medical regimens, usually following professional diagnosis of illness and it has also been used as a preventive health behaviors, which include health-promotion (e.g. diet, exercise) and health-risk (e.g. smoking) behaviors as well as vaccination and Breast cancer screening practices.

Research Design

The main study was both quantitative and qualitative in nature. The structured questionnaire and in-depth interviews were utilized to elicit information on behavioural risk factors for breast and cervical cancers among women in two states in Nigeria (Ogun and Kwara). The research was funded by Covenant University Centre for Research, Innovation and Development (CUCRID). The two states were randomly selected from the South-west and North-central out of the six geopolitical zones in Nigeria. The survey focused on all women of reproductive age irrespective of their cancer experience, while the in-depth interview was conducted on women who are currently experiencing breast or cervical cancers.

The report for this paper is mainly from the quantitative research (survey) with a focus on the knowledge and attitude of women towards breast cancer and breast screening.

Study Population

The study population was selected through a random-route walk within the wards that were selected in a local government area in Ogun state. We sought the formal permission from head of

households and also followed due community reconnaissance procedure such as seeking express permission from community leaders (Amoo, Olawole-Isaac, Okorie, Ajayi, Adekola, Amana, & Olu-Owolabi, 2018). Each participant's consent was also solicited and dual consent was obtained in situations where the husband or the male partner is accessible. Each respondent was assured of confidentiality of their responses. Notwithstanding, all the participants were encouraged to participate but that they could withdraw from the interview or refuse to answer any question they are not comfortable with.

The study covered history of the participant life style in terms of occupation and sexual relationship, knowledge of cancer and their participation in breast screening exercise and if they have ever experienced breast cancer. Information on women who have experienced breast cancer have been earlier reported in previous studies (Amoo, Ajayi, Samuel, Adekeye & Odewale, 2017; Amoo *et al.*, 2018).

Data analysis

A total of 764 women were interviewed in a selected local government area in Ogun State. The extracted quantitative data were analysed using a three level technique of analysis: univariate, bivariate and multivariate techniques. Frequency distribution was used to summarise the profile of respondents, cross tabulations were conducted simultaneously between two variables of interest and a binary logistic regression was adopted to test the responsiveness of selected co-variates (such as age, educational attainment, working status, total life sexual partners and others) on women's participation in breast screening.

Results

Socio-demographic Profile of Respondents

A total of 764 women were sampled in Ogun state. Majority of them were aged 30-39 years (36.5%), with only about 0.7% aged 60 years & above. They are mostly married women (64.8%), and their most practiced religion is Christianity (69.8%). Their highest educational attainment is secondary level education (44.6), with majority as self-employed (58.6), and they are engaged mostly in trading (42.8%). (See Table 1).

Table 1. Percentage Distribution of Respondents by Socio-Demographic Characteristics

	Freq.	%
Sample (N)	764	100.0
Age		
Less than 20	61	8.0
20-29 years	194	25.4
30-39 years	279	36.5
40-49 years	167	21.9
50-59 years	58	7.6
60 years & above	5	.7
Marital Status		
Single/Never Married	190	24.9
Married/LWP	495	64.8
Separated/Divorced	46	6.0
Widowed	25	3.3
Cohabiting	8	1.0
Religious Affiliation		
Christianity	533	69.8
Islam	206	27.0
Others	25	3.3
Educational Attainment		
No Schooling	53	6.9
Primary Education	126	16.5
Secondary Education	341	44.6
Tertiary Education	244	31.9
Working Status		
Employee	160	20.9
Self-Employed	448	58.6
Unemployed	29	3.8
Full-Time House-wife	38	5.0
Still Schooling	89	11.6
Occupation		
Manufacturing	12	1.6
Trading/Distribution	327	42.8
Farming	5	.7
Education	76	9.9
Services	157	20.5
others	187	24.5

Source: Computed from 2015 Breast & Cervical Cancer Survey

Respondents' Breast Cancer Knowledge

The frequency distribution of respondent's knowledge of breast cancer revealed that 92% have heard about breast cancer, 70.5% knew that it is preventable while only a fragment knew about mammogram: 17.7%. (See Table 2).

This revelation is a pointer to the fact that, respondents in the study area have merely heard about breast cancer and probably might have also merely heard that it is preventable, but only a few knew about the procedure for its early detection.

Table 2. Percentage Distribution of Respondents by Breast Cancer Knowledge

	Freq.	%
Ever Heard about Breast Cancer		
Yes	705	92.3
No	59	7.7
Total	764	100.0
Know Breast Cancer is Preventable		
Yes	539	70.5
No	219	28.7
No Response	6	.8
Total	764	100.0
Know Mammogram		
Yes	135	17.7
No	614	80.4
No Response	15	2.0
Total	764	100.0

Source: Computed from 2015 Breast & Cervical Cancer Survey

Respondents' Knowledge and Attitude towards Breast Cancer Screening

Table 3 showed the relationship between respondents' knowledge about mammogram and their attitude towards breast cancer screening. It can be seen that 90.2% of respondents that know about mammogram are favourably disposed to breast cancer screening while 9.8% are not. In the same vein, 86.9% of those that does not know about mammogram are favourably disposed to breast cancer screening and 13.1% are not.

This shows that, many women in the study area have a favourable attitude towards breast cancer screening even though some of them claimed not to know about mammogram as shown in Table 3.

Table 3. Relationship between Respondent's Knowledge about Mammogram and their Attitude towards Breast Cancer Screening

		Attitude towards Screening		Total
		Favourable	Not favourable	
Know Mammogram	Yes	120 (90.2%)	13 (9.8%)	133 (100.0%)
	No	485 (86.9%)	73 (13.1%)	558 (100.0%)
Total		605 (87.6%)	86 (12.4%)	691 (100.0%)

Source: Computed from 2015 Breast & Cervical Cancer Survey

Binary Logistic Regression (BLR) of the Inter-relationship between Selected Co-variates and Women's Support for Breast Cancer Screening

Table 4 presents the Binary Logistic Regression (BLR) of the inter-relationship between selected co-variates and women's support for breast cancer screening.

The selected dependent variable is "attitude towards breast cancer screening" measured as "Yes" or "No" binary format.

Yes = 1 (favourable support for Breast screening)

No = 0 (unfavourable support for Breast screening)

The selected independent variables measuring “socio-demographic characteristics” are: age, residence, education, religion, marital status, total life sexual partners (TLSP) and working status.

The hypothesis estimated the log of likelihood $\log\left(\frac{p}{1-p}\right)$ on the independent variable.

$$\log\left(\frac{p}{1-p}\right) = \alpha + X_1\beta_1 + X_2\beta_2 + X_3\beta_3 \dots X_n\beta_n$$

β = Coefficient. It is interpreted by the signs -ve or +ve, and it is equivalent to correlation definitions. It defines the type and the magnitude of relationship.

S.E = Standard Error

Wald = interpreted by its magnitude. The bigger the ‘Wald’, the more likely the variable is significant.

Sig. = P value/significance level. If the P-value is ≤ 0.05 , then there is a statistical significance, if $P < 0.001$, there is a high statistical significance (i.e., less than one in a thousand chance of being wrong). And if $P > 0.05$, there is no statistical significance.

Exp (β) = Odd ratio indicating the likelihood of the occurrence of the independent variable (<1 is less likely, >1 is more likely). It is interpreted with the reference category (RC), where the probability of the dependent variable will increase or decrease

RC = Reference Category.

Model 1

Table 4. Binary Logistic Regression Illustrating Co-variates of Women's Favourable Support for Breast Cancer Screening

Selected variables	B	S.E.	Wald	Sig.	Exp(B)
Age group					
	RC				
≤ 29 years					
30-49 years	-1.643	.349	22.136	.000	.193
50 & above	-2.214	.716	9.569	.002	.109
Residence: Rural (RC)					
Urban	-.079	.283	.078	.779	.924
Education					
	RC				
No Schooling					
Primary Education	.133	.758	.031	.861	1.142
Secondary Education	-.031	.712	.002	.965	.970
Tertiary Education	.069	.741	.009	.926	1.071
Religious affiliation					
	RC				
Christianity					
Islam	-.471	.343	1.885	.170	.624
Others	.545	.632	.745	.388	1.725
Marital Status					
	RC				
Single/Never Married					
Married/LWP	1.452	.582	6.228	.013	4.272
Separated/Divorced	2.288	.762	9.008	.003	9.857
Widowed	2.564	.865	8.781	.003	12.987
Cohabitation	1.231	1.013	1.478	.224	3.426
TLSP: Only One (RC)					
	RC				
2-3 Partners	.317	.316	1.006	.316	1.374
4 & above	.737	.499	2.182	.140	2.089
Working status: Employee					
	RC				
Self-Employed	-.695	.370	3.522	.061	.499
Unemployed	.600	.711	.712	.399	1.823
Full-Time Housewife	-.070	.666	.011	.917	.933
Constant	-2.315	.964	5.771	.016	.099
-2 Log likelihood = 358.190		Cox & Snell R		Nagelkerke R Square	
		Square = 0.078		= 0.149	

Source: Computed from 2015 Breast & Cervical cancer Survey

The model measured women's attitude towards breast cancer screening in relation to their age, residence, education, religion, marital status, total life sexual partners (TLSP) and working status. As depicted in table 4, women that are older in age are unfavourably disposed to breast cancer screening and have a negative attitude towards it ($r = -1.643$ and -2.214), and they will be 0.193 and 0.109 times less likely to attend screening when compared to younger women. P-value = 0.000 and 0.002 respectively. This analysis revealed a high statistical significance denoting some level of resistance to screening among older women in relation to the younger ones. Additionally, the analysis also showed that women with a tertiary education together with those with primary education are favourably disposed towards breast screening ($r = 0.069$ and 0.133) and will be 1.071 and 1.142 times more likely to attend screening compared to women with no education. While women with secondary education have a negative attitude towards screening ($r = -0.031$) and will be 0.970 times less likely to attend screening when compared to women with no education. All the categories of education are however not statistically significant, p-value > 0.05.

In the same vein, married women together with those that are separated/divorced including widows and those involved in co-habitation all showed a favourable attitude towards breast screening ($r = 1.452, 2.288, 2.564$ and 1.231). They will also be 4.27, 9.85, 12.9 and 3.4 times more likely to attend screening compared to women who are single and have never married at p-value <0.05 except women co-habiting at p-value = >0.05. Lastly, working status is not significantly related to breast screening (p-value > 0.05) with only the unemployed showing a favourable attitude towards screening compared to the employees, the self-employed and the full house-wives.

Overall, the Cox & Snell R Square = 0.078 and the Nagelkerke R Square = 0.149 implying that only 7.8% and 14.9% of change in attitude to breast cancer screening could be explained by all the independent variables.

Discussion

This study examined the knowledge and attitude of women about breast cancer. It also looked at the relationship between socio-demographic characteristics and attitude of women towards breast cancer screening.

The study found that, almost all respondents in the study area have heard about breast cancer and more than half knew that it is preventable with just only a fraction knowing what mammogram is. Even with the majority of the women not knowing what mammogram is, an appreciable number of them have a favourable attitude towards it. Multi-variate analysis was done to see the relationship between respondents' socio-demographic characteristics and their attitude towards breast screening. This was aimed at examining whether factors such as age, education, marital status and working status had a significant influence on women's attitude towards breast screening.

The binary logistic regression (BLR) showed that older women with secondary education, that are either employees, self employed or full house-wives have an unfavourable attitude towards breast screening, while women with primary and tertiary education, that are either married, divorced, widowed or co-habiting and unemployed showed a favourable attitude towards breast screening. These findings supports and disagrees with previous studies and existing literature in certain respect.

The relationship between breast screening and socio-demographic characteristics have been investigated in various studies across the world (Donato, Bollani, Spiazzi, Soldo, Pasquale, Monarca, Lucini & Nardi, 1991; Ahmed, Smith, Haber & Belcon, 2009).

Donato *et al* for example compared attenders of breast cancer screening programs with non-attenders with respect to demographic and socio-economic factors and found that response was higher among less educated women, married and widowed women, than among more educated, single or divorced, and immigrant women. Reasons for non-participation among others include lack of interest, fear and anxiety about breast cancer.

In another study aimed at examining breast cancer awareness, attitude and screening practices in the six geo-political zones in Nigeria (Allo, Edewor & Imhonopi, 2018), it was found that there was an unfavourable attitude towards breast screening even among those who were aware of the screening methods (Ojewusi, Obembe, Arulogun & Olugbayela, 2016). In other similar studies,

no association was found between breast screening, age, educational attainment, profession and marital status (Aniebue & Aniebue, 2008; Nasiru & Olumuyiwa, 2009; Olajide, Ugburo, Habeebu, Lawal, Afolayan & Mofikoya, 2014).

Conclusion/Recommendations

Going by the findings from this present study, it can be concluded that majority of women in the study area have heard about breast cancer. They are however not familiar with mammography screening as one of the breast cancer screening method. Additionally, women that are older in age, women with secondary education, and women that are either employees, self employed or full house-wives are unfavourably disposed to breast screening, while those with primary and tertiary education, that are either married, divorced, widowed or co-habiting and unemployed showed a favourable attitude towards breast screening. It is recommended that older women should be targeted for campaign and enlightenment about breast screening, and breast screening centers should be older women friendly to encourage them to participate in screening programs.

There is also a need for intensified campaigns and enlightenment programs to encourage all women irrespective of their educational background to participate in breast cancer screening. Finally, awareness campaigns and programs about breast screening should be taken to offices, market places, households and other places where we have women in order to encourage women who are busy with their employment or house chores to participate in breast screening activities.

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