Awareness of Breast Cancer and Practice of Breast Self-Examination amongst Female Students of a Tertiary Institution in South-South Nigeria

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Abstract

Background: Breast cancer is the leading cause of cancer deaths presently, representing about 23% of all cancer cases and approximately 18% percent of deaths are attributed to it in Nigeria. It is presently the most prevalent kind of cancer worldwide, with 2.26 million cases reported in 2020. Breast self-examination (BSE) is a way to watch for signs of breast cancer. It is a step-by-step process women can use to examine their breasts. By looking at, and feeling their breasts regularly, they can observe abnormal changes.

Aim: To assess the awareness of breast cancer and practice of breast self-examination amongst female students in a tertiary institution in South-South Nigeria.

Methods: This was a cross-sectional descriptive study done amongst female students of the Federal University Otuoke from January to March 2018. Simple random sampling technique by simple balloting was used in the selection of the respondents until sample size was achieved. Data was collected using a semi-structured questionnaire and were analyzed using SPSS version 23.

Results: Most, 406 (95.8%) of the respondents have heard about breast cancer. Just 52.1% of the respondents practice Breast self-examination (BSE) and 203 (47.9%) do not. Amongst those that practice BSE, majority 113 (54.1%) do it at least once a month. Amongst those that do not practice BSE, 48 (27.6%) do not consider it important. Age, ethnic group/tribe and the religion of respondents have a statistically significant association with been aware of breast cancer and also with practice of BSE (p > 0.05).

Conclusion: Awareness about breast cancer was very high but practice of breast self-examination was on the average. There is need for more education on the risks of the disease in the general population and the need for early detection by practicing BSE and other screening measures.

Keywords: Awareness; Breast Cancer; Breast Self-Examination; Female students; South-South; Nigeria.

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INTRODUCTION

Breast cancer is a disease condition that is characterized by the abnormal growth of cells in the breast.[1] Recent years have witnessed an explosion in knowledge about the basic sciences of the disease, including the genetic basis and the pathology.[2] Breast cancer is presently the most prevalent kind of cancer worldwide, with 2.26 million cases reported in 20203. It is also the most common cancer among women both in developed

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and developing countries, and a major burden of public health concern.[3] The developed countries have a higher incidence rate and the incidence rate also varies by ethnicity and race.[4] Breast cancer is also reported to be the 5th leading cause of cancer deaths worldwide in 2020, with 685,000 deaths attributed to it.[3]

In Nigeria, breast cancer cases were in the past very low but now increasing as a result of adoption of western lifestyles. It is the leading cause of cancer deaths presently, representing about 23% of all cancer cases and approximately 18% percent of deaths are attributed to it in the country.[3,4]

There are several risk factors attributed to the development of breast cancer, having these risk factors doesn't mean direct causation.[5] Some of these risk factors includes age, having a dense breast, gender, genes, early menstruation and family history, these are non-modifiable risk factors. Modifiable risk factors include excessive alcohol intake, hormone therapy, obesity among others.

Following a healthy lifestyle, getting regular screenings and being careful of the risk factors could help reduce the risk of developing the disease.[5] Breast self-examination (BSE) is a way to watch for signs of breast cancer. It is a step-by-step method women can use to examine their breasts. By looking at and feeling their breasts regularly, they can notice anything that seems abnormal.[6] BSE involves visualization and palpation of the breast by oneself for lumps, shape, texture, size, and contour.[7] Its best to be done at least once in a month, possibly at same time each month. The exam can help women notice changes in their breast in case it occurs and also have better knowledge about their breast.[5] However, this should not replace clinical breast exams and screening tests such as breast mammogram that are usually recommended by doctors. You should still see your healthcare providers and/or gynecologist regularly.[6] This study aims to assess the awareness of breast cancer and the practice of breast self-examination amongst female students of a tertiary institution in south-south Nigeria.

Several studies on awareness of breast cancer, BSE and practice of BSE have been done in Nigeria and other parts of Africa. Amongst these was a review of literature that was conducted to assess the awareness and practice of BSE among women in different countries in Africa. A total of 28 out of 80 articles were reviewed from 15 African countries based on relevance. Majority of the reviewed studies showed adequate awareness, mainly from the media, but poor practice of BSE among women in various countries in Africa. A major barrier identified was inadequate knowledge of BSE technique. Although awareness of BSE was relatively high in many of the reviewed studies, the practice was low.[8]

A pre-post intervention study on improving knowledge about breast cancer and breast self-examination in female Nigerian adolescents using peer education, reported knowledge score (20.61±13.4) prior to training was low and it statistically significantly improved to 55.93±10.86 following training p<0.0001 Following peer training, statistically significant improvement (p 0.037-<0.001) occurred in most knowledge domains apart from symptomatology. Pre-peer training 906 (67.8%) students knew about BSE. Significantly more students 1134 (94.7%) knew about BSE following peer training.[9]

A cross sectional descriptive study on awareness of breast cancer risk factors and practice of breast self-examination among high school students in Turkey, reported that alow percentage of students reported that they had performed breast self-examination monthly. The most common reason for not doing breast self-examination was "not knowing how to perform breast self-examination" (98.5%). Most of the students had little knowledge of breast cancer and its risks. The most widely known risk factor by the students was personal history of breast cancer (68.7%). There was a significant relation between breast self-examination practice and age, school grade, knowledge about breast cancer and knowledge about breast self-examination.[10]

Another cross-sectional descriptive study in Uganda on breast cancer knowledge and breast self-examination practices among female university students in Kampala, reported high awareness of breast cancer (98.0%) and BSE practices (76.5%) among female students. Over half the students (61.3%) had an intermediate level of knowledge about risk factors related to breast cancer and the signs and symptoms of the disease. Skills related to BSE practices were found to be low (43.6%). The majority (56.9%) of students received information about breast cancer via mass media.[11]

A similar descriptive cross-sectional study in South-South, Nigeria amongst university students on knowledge and awareness of breast cancer, reported that all respondents (100%) had heard of breast cancer with radio (52.9%) and television (47.3%) respectively as the major sources of information. Level of knowledge and awareness of risk factors for respondents from Delta State University and

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University of Port Harcourt was poor (51.2%, 49.8%) respectively. For both universities, respondents had excellent knowledge and awareness of breast cancer symptoms (75.5%, 72.7% respectively); breast cancer prevention and treatment (89.2%, 87.8%) respectively; and breast cancer detection methods (94.0%, 93.5%) respectively. The study revealed excellent knowledge and awareness of breast cancer symptoms, breast cancer prevention and treatment and breast cancer detection methods, but poor knowledge and awareness of breast cancer risk factors.[12]

Another descriptive cross-sectional study on knowledge of breast cancer and need for its Screening among female healthcare workers in Oshimili South Local Government Area of Delta State, Nigeria reported that a total of 406 respondents (97.1%) were aware of breast cancer; 340(81.3%) practice breast self-examination (BSE); 117(41.9%) knew about breast mammography. The commonest source of information about breast cancer was from fellow healthcare workers (45.3%).[13]

METHODS

The study was conducted at the Federal University Otuoke. Otuoke is a semi-urban multicultural society in Ogbia Local Government Area of Bayelsa State, South-South Nigeria. The university has five faculties and twenty-nine departments with undergraduate students' population of over 3,500. The female student's population is estimated to be about 2100. This area is connected to the National grid of the Power Holding Company of Nigeria. The main religion in this area is Christianity and the language spoken by the people are Ijaw, English language and Pidgin English.

This is a cross-sectional descriptive study done amongst female students of the Federal University Otuoke from January to March 2018. Simple random sampling technique by simple balloting was used in the selection of the respondents until sample size was achieved. Consent to participate in this study was sought from the respondents after detailed explanations to them about what the study entails, as well as assuring them of confidentiality of information to be given. The approval for the study was obtained from the ethical committee of the university.

The minimum sample size was calculated using the Cochrane one proportion sampling size formular 14 with population greater than 10,000;

$n = Z2pq/d2$

Where,

n = the minimum sample size

z = standard normal deviate, set at 1.96 corresponding to 95% significance level.

P = 50% proportion of characteristics (attributes) in the population because there are no reports of previous studies on this in this area.

q = 1 – p

q = 1 – 0.5 = 0.5

d = precision or degree of accuracy i.e., acceptable margin of sample error set at 5% or 0.05.

Substituting the above figures in the formula, the desired sample size, n, for the study will be

$n = (1.96)2 × 0.5 × 0.5/ 0.052 = 385$. This therefore means that a minimum sample size of 385 is required for the study to be valid.

Adjusting by 10% for non-response

n = 424 is now the sample size for the study.

The data obtained were analyzed using SPSS version 22. Test of associations were done using chi square statistics at 95% confidence levels.

A total of 424 female students were interviewed in this study. The questionnaires for this study were a semi-structured questionnaire and it was self-administered.

RESULTS

A total number of four hundred and twenty-four (424) female students of the Federal University,

Table 1: Socio-demographic characteristics of respondents.

Variable	Frequency	Percentage
Age in years (n = 328)		
15 – 20	15547.3	
21 – 25	16150.6	
26 – 30	6	1.8
31 – 35	6 1.8	

Ethnicity (n = 413)

Ijaw	167	40.4
Igbo	119	28.8
Hausa	12	2.9
Yoruba	33	8.0
Urhobo	46	11.1
Edo	12	2.9
Others	24	5.8
Marital Status (n = 424)		
Single	406	95.8
Married	12	2.8
Separated	2 1.4	
Religion (n = 419)		
Christianity	408	96.2
Islam	11	2.6
Christian denominations (n = 408)		
Catholic	101	24.1
Pentecostal	234	55.8
Anglican	57	13.6
Others	16	3.8
If currently employed (n = 424)		
Yes	12	2.8
Student	412	97.2

Otuoke were included in the study.

The socio-demographic characteristics of respondents are shown on table 1 above. The mean age of respondents was 21.0 ± 3.1 years. The predominant age group was 20 – 25 years 161 (50.6%); followed closely by age group 15 – 20 years 155 (47.3%). Majority 167 (40.4%) of the respondents were of the Ijaw ethnicity; followed by the Igbo ethnicity 119 (28.8%). The respondents were predominantly Christians 408 (96.2%), with denominations more of Pentecostal 234 (55.8%), followed by Catholics 101 (24.1%). All the respondents (100%) were students but 12 (2.8%) were employed.

Table 2: Awareness of breast cancer and breast cancer risks

Variable	Frequency	Percentage (%)
Have you ever heard of breast cancer? (n=424)		
Yes	406	95.8
No	18	4.2
If yes, source of information (n =400)		
Mass media	222	55.5
Newspaper	30	7.5
Health workers	118	29.5
Others	30	7.5
How does breast cancer present? (n=407)		
Painless lump	125	30.7
Painful lump	252	61.9
Breast ulcer	30	7.4

Most, 406 (95.8%) of the respondents have heard about breast cancer. Just above average number of the respondents 222 (55.5%) got their information about breast cancer from the mass media; this was

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followed by healthcare workers, 118 (29.5%) as source of information about breast cancer. Majority, 252 (61.9%) know that breast cancer presents with

a painful lump. One hundred and twenty-five, (30.7%) respondents believes that breast cancer presents with a painless lump; and 30 (7.4%)

Table 3: Practice of breast self-examination (BSE)

Variable	Frequency	Percentage (%)
Do you practice BSE? (n=424)		
Yes	221	52.1
No	203	47.9
If yes, how often? (n=209)		
At least once a month	113	54.1
Twice a month	43	23.0
Once a year	12	5.7
Others	36	17.3
If no, what are the reasons for not practicing BSE? (n=174)		
Ashamed of my breast size	6	3.4
Too busy to do it	12	6.9
Do not consider it important	48	27.6
Other	108	62.1

believes that it presents with breast ulcer.

Just above average number of the respondents 221 (52.1%) practice Breast self-examination (BSE) and 203 (47.9%) do not. Amongst those that practice BSE, majority 113 (54.1%) do it at least once a month.

Amongst those that do not practice BSE, 48 (27.6%) do not consider it important; 12 (6.9%) feels they are too busy; 6 (3.4%) are ashamed of their breast size; and majority 108 (62.1%) gave other reasons for not practicing BSE.

Table 4: Association between the awareness of breast cancer and the social demographic characteristics of respondents

Variable	Have you ever heard of breast cancer?		Total	Test/p-value
	Ye	No		
Age in years (n = 328)				
15 – 20	155 (100.0)	–	155(100.0)	x^2 = 10.2
21 – 25	155 (96.3)	6 (3.7)	161 (100.0)	p = 0.0165
26 – 30	6 (100.0)	–	6 (100.0)	df = 3
31 – 35	6 (100.0)	–	6 (100.0)	
Ethnic group/Tribe (n = 418)				
Ijaw	167 (96.5)	6 (3.5)	173(100.0)	x^2 = 28.7
Igbo	113(100.0)	–	113 (100.0)	p = 0.0001
Hausa	12(100.0)	–	12(100.0)	df = 6
Yoruba	30(83.3)	6 (16.7)	36 (100.0)	
Urhobo	42(87.5)	6(12.5)	48 (100.0)	
Edo	12(100.0)	–	12 (100.0)	
Others	24 (100.0)	–	24(100.0)	
Religion (n =418)				
Catholic	101 (100.0)	–	101 (100.0)	x^2 = 12.4
Pentecostal	221 (94.8)	12 (5.2)	233 (100.0)	p = 0.015
Anglican	48 (88.9)	6 (11.1)	54 (100.0)	df = 4
Islam	12 (100.0)	–	12 (100.0)	
Others	18 (100.0)	–	18 (100.0)	

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The table above shows that the age, ethnic group/ tribe and the religion of respondents have a statistically significant association with been aware of breast cancer (p > 0.05).

Table 5: Association between the practice of breast self-examination and the social demographic characteristics of respondents.

Variable	Practice of Breast Self-Examination		Total	Test/p-value
	Yes	No		
Age in years (n = 328)				
15 – 20	54 (34.8)	101(65.2)	155(100.0)	$x^2 = 31.7$
21 – 25	101 (62.7)	60 (37.3)	161 (100.0)	p = 0.0001
26 – 30	0 (0)	6(0)	6 (100.0)	df = 3
31 – 35	6 (100.0)	0(0)	6 (100.0)	
Ethnic group/Tribe (n = 418)				
Ijaw	102 (59.0)	71 (41.0)	173(100.0)	$x^2 = 32.4$
Igbo	47(41.6)	66 (58.4)	113 (100.0)	p = 0.0001
Hausa	0(0)	12(100.0)	12(100.0)	df = 6
Yoruba	18 (50.0)	18 (50.0)	36 (100.0)	
Urhobo	24 (50.0)	24 (50.0)	48 (100.0)	
Edo	12(100.0)	0(0)	12 (100.0)	
Others	12 (50.0)	12 (50.0)	24(100.0)	
Religion (n =418)				
Catholic	53 (52.5)	48 (47.5)	101 (100.0)	$x^2 = 37.2$
Pentecostal	108 (46.4)	125 (53.6)	233 (100.0)	p = 0.0001
Anglican	36 (66.7)	18 (33.3)	54 (100.0)	df = 4
Islam	0 (0)	12 (100.0)	12 (100.0)	
Others	18 (100.0)	0 (0)	18 (100.0)	

The table above shows that the age, ethnic group/ tribe and the religion of respondents have a statistically significant association with the practice of breast self-examination (p > 0.05).

DISCUSSION:

This study revealed that most, (95.8%) of the respondents were aware of breast cancer before the interview, this shows a slightly lower but similarly high level of awareness as compared to the study in Oshimili- South LGA of Delta State[13] done amongst female healthcare workers with 97.1% awareness and the study in Kampala, Uganda[11] with 98.0% awareness and also with the study in South-South, Nigeria[12] with a 100.0% awareness. The level of awareness in this study is higher than the level of awareness in the study in Turkey,[10] amongst high school students that reported low level of awareness of breast cancer. This could be due to the fact that, this study and the other studies that reported high awareness were done amongst university students and health workers who have a higher level of education and exposure. In this study, information

about breast cancer were gotten more from mass media (55.5%) and then from healthcare workers (29.5%).

This is a similar finding from the study done in Kampala, Uganda[11] that reported that 56.9% of their respondents got their information on breast cancer from the mass media but a higher finding as compared to that reported by the study in South-South, Nigeria[12] that reported 52.9% radio and 47.3% television as source of information by their respondents on breast cancer. All the three above studies had mass media as their main source of information of their respondents. This contrary to the study in Oshimili-South LGA, Delta State[13] that reported that healthcare workers (45.3%) were their most source of information to their respondents. This may not be surprising, since the study was done amongst female healthcare workers who were mostly taught by more senior healthcare workers both at school and during actual practice of their profession.

Majority, (61.9%) know that breast cancer presents with a painful lump, while, 30.7% respondents believes that breast cancer presents with a painless

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lump; and 7.4% believes that it presents with breast ulcer, this show less level of knowledge as compared to the study in South-South, Nigeria[11] that reported that the level of breast cancer detection knowledge was 94.0% and 93.5% in the two centers used in their study respectively.

Just above average number of the respondents (52.1%) practice Breast self-examination (BSE) in this study. This level of practice of BSE is higher as compared to the study in Oshimili-South LGA, Delta State[13] that reported practice of BSE amongst female healthcare workers to be 41.9% and also in the study in Africa[8] that reported poor practice of BSE. But however, the finding from this study on practice of BSE (52.1%) was lower to the report from the study in Kampala, Uganda[11], that reported 76.5% practice of BSE amongst university students. In this study, amongst those that practice BSE, majority (54.1%) do it at least once a month. Twenty-seven-point six percent of those that do not practice BSE do not consider it as important; 6.9% feels they are too busy; 3.4% are ashamed of their breast size; and majority 62.1% gave other reasons for not practicing BSE. The reasons given for not practicing BSE in this study is contrary to the main reason given by respondents in the study in Turkey[10], where respondents said they do not practice BSE because they do not know how to do it.

Findings from this study shows that the age, ethnic group/tribe and the religion of respondents have a statistically significant association with been aware of breast cancer. This is not surprising as university undergraduates are usually above the ages of 16 years and well exposed to peer discussions that may help increase enlightenment. Findings from this study also shows that the age, ethnic group/tribe and the religion of respondents have a statistically significant association with the practice of breast self-examination. This finding is similar to what the study in Turkey 10 amongst high school students reported, that there was significant relation between breast self-examination practice and age, and school grade.

CONCLUSION

The level of awareness about breast cancer was very high but practice of breast self-examination was on the average and awareness of presenting symptoms for breast cancer was also on the average. There is need for more education on the risks of the disease in the general population and the need for early detection by practicing BSE and other screening measures.

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