

Practice of Clinical Breast Examination, Awareness and use of Mammography as a Breast Cancer Screening Method amongst Female Students of a Tertiary Institution in South-South Nigeria

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How to cite this article:

Anthony Okeoghene Eguvbe, Peter Waibode Alabrah/Practice of Clinical Breast Examination, Awareness and use of Mammography as a Breast Cancer Screening Method amongst Female Students of a Tertiary Institution in South-South Nigeria/ Journal of Radiology. 2022;1(1):41-46.

Abstract

Background: Breast cancer remains the leading cause of cancer deaths presently, representing about 23% of all cancer cases and approximately 18% percent of deaths in Nigeria. It is estimated that 26,310 new cases occurred in 2018. Clinical breast examination (CBE) is a physical examination that is carried out by a health care provider in an attempt at early detection of breast abnormality and diseases. Healthcare practitioners also use mammogram to assess early signs of breast cancer.

Aim: To assess the practice of CBE, awareness and use of mammography as a breast cancer screening method 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: Majority, 215 (54.6%) has never had CBE; Few, 78 (19.8%) of the respondents had CBE in the last three months; 35 (8.9%) in the last 1 year; 66 (16.8%) had it in the last 2 years. A total of 179 (45.4%) of respondents have had CBE at one time in the last two years. Majority, 287 (73.8%) haven't heard of mammography; 102 (26.2%) have heard of it; majority, 132 (78.6%) have never done it; while 18 (10.7%) did it in the last three months; 6 (3.6%) did it in the last one year; 12 (7.1%) did it in the last two years. A total of 36 (21.4%) did it in last two years.

Conclusion: There was low level of practice of CBE; very low awareness and use of breast mammography as a breast cancer screening method. There is need for more advocacy and education of the general population as regards breast cancer screening methods.

Keywords: Practice; Clinical breast examination; Awareness; Use; Mammography; Breast cancer.

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Received on: 00.00.2022

Accepted on: 00.00.2022

INTRODUCTION

Breast cancer accounts for the second cause of cancer deaths in women and it is of global public health concern. Over one million breast cancer cases are diagnosed annually worldwide.¹ These amount to a total 411,000 deaths from breast cancer accounting for 14% of female cancer deaths globally.^{2,3} It is estimated that about a little more than half (60%) of breast cancer deaths occur in economically developing countries like Nigeria.^{3,4}

Breast cancer cases were in the past less prevalent in Nigeria, but now there is increasing number of cases probably due to the adoption of western lifestyles, culture and diet that consequently result in increased exposure to breast cancer risk factors. Breast cancer remains the leading cause of cancer deaths presently, representing about 23% of all cancer cases and approximately 18% percent of deaths in the country attributable to it.^{5,6} It is estimated that 26, 310 new cases occurred in 2018.⁶ This was projected to increase by approximately 4000 cases annually over the next 10 years.⁷ It is unclear whether this trend could be attributed to increased exposure to putative breast cancer risk factors, increasing life expectancy, population ageing or improved detection of incident cases.

Clinical breast examination (CBE) is a physical examination that is usually carried out by a health care provider. It is often done during a patient's regular medical check-up. A CBE should be performed by a health care provider that is well trained in the technique.⁸ This may be a physician, nurse practitioner or other healthcare worker. Not all health care providers have this training. If a CBE is not offered to the patient or client at the time of check-up and if such client would like one, they should ask the health care provider to perform one or refer such client to someone who has the expertise to perform one.⁸

A mammogram is an X-ray picture of the breast. Healthcare practitioners use mammogram to assess early signs of breast cancer. Regular mammograms are the best tests doctors have to find breast cancer early, sometimes up to three years before it can be felt.⁹ The American Cancer Society recommends yearly mammograms starting at age 40 and continuing for as long as a woman is in good health. Clinical breast exam (CBE) is recommended to be done every year for women 40 and over. All major US medical organizations recommend screening mammography for women aged 40 years and older. Screening mammography reduces breast cancer mortality by about 20%-35% in women aged 50-69 years and slightly less in women aged 40-49 years at 14 years of follow-up.⁹ The WHO recommends mammography every 1-2 years for women aged 50-69 years.¹⁰

Several studies on CBE and mammography as screening methods for breast cancer have been done in Nigeria and other parts of the world. In a prospective, cluster randomized controlled trial on the effect of screening by CBE on breast cancer

incidence and mortality after 20 years in Mumbai, India, showed that breast cancer was detected at an earlier age in the study group as compared to the control group, with a significant reduction in the proportion of women with stage 3 or 4 disease.¹¹

A cross-sectional study conducted on female health professional of King Fahad Medical City (KFMC), Saudi Arabia reported that 370 (93.7%), 339 (85.8%), and 368 (93.2%) participants had heard of breast self-examination, clinical breast examination, and mammography, respectively. A total of 295 (74.7%) participants reported practicing breast self-examination, 95 (24.1%) had undergone clinical breast examination and 74 (18.7%) had ever undergone mammography.¹²

A study on the knowledge, attitudes and practices of radiology professionals in Jordan as regard to breast cancer screening methods reported that although 61.8% of participants were knowledgeable about breast cancer prevention, only 65.7% of respondents practiced breast self-examinations (BSE), 28.7% underwent clinical breast examination (CBE) and 15.1% underwent screening mammography.¹³

A cross-sectional descriptive study in Malaysia to determine the prevalence of breast cancer screening, specifically, clinical breast examination was done in five selected districts amongst women aged between 20 to 64 years, from a total of 1000 households. The study reported that 53.3% had done clinical breast examination. There were significant associations of clinical breast examination with notably, income and distance from the hospital.¹⁴

A cross-sectional study on clinical breast examination practices among women undergoing screening mammography reported an uptake of 38.5% amongst non white women and 57.4% amongst white women.¹⁵ Another cross-sectional study in the Kingdom of Saudi Arabia reported results showing that 35.5%, 27.4% and 37.8% of participants reported that they practiced BSE, CBE and annual mammography, respectively.¹⁶

Table 1: Socio-demographic characteristics of respondents.

Variable	Frequency	Percentage
Age in years (n = 328)		
15 - 20	155	47.3
21-25	161	50.6
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
Yourba	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

The socio-demographic characteristics of respondents are shown on table 1 above. The mean age of respondents was 21.0 ± 3.4 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: Clinical breast examination (CBE)

Variable	Frequency	Percentage (%)
When last did you have your breast clinically examined by a health professional? (n=394)		
Within the last 3 months	78	19.8
Within the last one year	35	8.9
Within the last two years	66	16.8
Never	215	54.6

The above table shows that 78 (19.8%) of the respondents had CBE in the last three months; 35 (8.9%) in the last 1 year; 66 (16.8%) had it in the last 2 years; and 215 (54.6%) has never had CBE ever.

This also shows that a total of 179 (45.4%) of respondents have had CBE at one time in the last two years.

Table 3: Awareness of breast mammography

Variable	Frequency	Percentage (%)
Have you heard of breast mammography? (n=389)		
Yes	102	26.2
No	287	73.8
If yes, when last did you do mammography? (n=168)		
Within the last 3 months	18	10.7
Within the last one year	6	3.6
Within the last two years	12	7.1
Never	132	78.6

The table above shows that 102 (26.2%) of the respondents have heard of breast mammography and the majority, 287 (73.8%) haven't heard of it.

Amongst those that have heard of breast mammography, 18 (10.7%) have done it in the last three months; 6 (3.6%) have done it in the last one year; 12 (7.1%) have done for the last two years; while, 132 (78.6%) have never done it.

This also shows that a total of 36 (21.4%) of respondents had done breast mammography at one time in the last two years.

Table 4: Association between practice of clinical breast examination and the social demographic characteristics of respondents

Variable	When last have you had clinical breast examination Total					Test/p-value
	last 3 months	last 1 year	last 2 years	Never		
Age in years (n = 316)						
15 - 20	6 (2.9)	18 (8.6)	30 (14.4)	155 (74.2)	209(100.0)	x ² = 46.2
21 - 25	42 (19.1)	5 (2.3)	24 (10.9)	149 (67.7)	220 (100.0)	p = 0.0001
26 - 30	0 (0)	0(0)	0(0)	6 (100.0)	6 (100.0)	df = 9
31 - 35	6 (50.0)	0(0)	0(0)	6 (50.0)	12 (100.0)	
Ethnic group/Tribe (n = 388)						
Ijaw	36 (21.5)	6 (3.6)	30(17.9)	95 (56.9)	167(100.0)	x ² = 93.8

Igbo	24 (21.2)	23 (20.4)	30 (26.5)	36 (31.9)	113 (100.0)	p = 0.0001
Yoruba	-	-	-	30 (100.0)	30 (100.0)	df = 15
Urhobo	12(28.6)	6(14.3)	-	30 (71.4)	42 (100.0)	
Edo	-	-	6 (50.0)	6 (50.0)	12 (100.0)	
Others	6 (25.0)	-	-	18 (75.0)	24(100.0)	
Religion (n =388)						
Catholic	18(17.8)	5(4.9)	30 (29.7)	48 (47.5)	101 (100.0)	x2 = 69.5
Pentecostal	42 (19.0)	18 (8.1)	36 (16.3)	125 (56.6)	221 (100.0)	p = 0.0001
Anglican	6 (14.3)	12 (28.6)	-	24 (57.1)	42 (100.0)	df = 12
Islam	-	-	-	6 (100.0)	6 (100.0)	
Others	12 (66.7)	-	-	6 (33.3)	18 (100.0)	

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

Table 5: Association between awareness of breast mammography and the social demographic characteristics of respondents

Variable	Awareness of breast mammography			Test/p-value
	Yes	No	Total	
Age in years (n = 317)				
15 - 20	12 (7.7)	143 (92.3)	155(100.0)	x2 = 64.5
21 - 25	66 (44.0)	84 (56.0)	150 (100.0)	p = 0.0001
26 - 30	-	6 (100.0)	6 (100.0)	df = 3
31 - 35	6 (100.0)	-	6 (100.0)	
Ethnic group/Tribe (n = 383)				
Ijaw	54 (33.5)	107 (66.5)	161 (100.0)	x2 = 25.3
Igbo	24 (22.2)	84 (77.8)	108 (100.0)	p = 0.0001
Hausa	-	6 (100.0)	6 (100.0)	df = 6
Yoruba	12(40.0)	18(60.0)	30(100.0)	
Urhobo	6 (14.3)	36(85.7)	42 (100.0)	
Edo	6(50.0)	6 (50.0)	12 (100.0)	
Others	-	24(100.0)	24 (100.0)	
Religion (n =383)				
Catholic	24 (26.7)	66 (73.3)	90 (100.0)	x2 = 13.2
Pentecostal	48 (21.7)	173 (78.3)	221 (100.0)	p = 0.010
Anglican	18 (42.9)	24 (57.1)	42 (100.0)	df = 4
Islam	-	12(100.0)	(100.0)	
Others	6 (33.3)	12 (66.7)	18 (100.0)	

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 mammography($p > 0.05$).

DISCUSSION

The study shows that 19.8% of the respondents had CBE in the last three months; 8.9% in the last 1 year; 16.8% in the last two years and this gives a total of 45.4% of the respondents that has had CBE at one time in the past two years. This is a higher rate of practice of CBE as compared to the studies in the Kingdom of Saudi Arabia 12 amongst female health professionals that reported that practice of CBE was 24.1%; the findings from this study was

also higher than that of the study in United States 15 amongst black women that reported practice of CBE to be 38.5%; and the second study in the Kingdom of Saudi Arabia¹⁶ that reported practice of CBE to be 27.4% and the study in Jordan¹³ with practice of CBE of 28.7%. The practice of CBE in this study was lower than the findings on practice of CBE from the study in Malaysia¹⁴ that reported the practice of CBE to be 53.3% and also in the study in the United States¹⁵ amongst white women that reported practice of CBE to be 57.4%. This higher

level of practice could be due the level of economic, social and educational development in these two countries as compared to Nigeria, Jordan and the Kingdom of Saudi Arabia.

This study found that only 26.2% of the respondents have heard of breast mammography. This is far a lower level of awareness as compared to the study amongst female health professionals in the Kingdom of Saudi Arabia 12 that reported that the awareness level of breast mammography was 93.2%. This higher awareness level could be attributed to the fact the respondents in their study were healthcare professionals who have more exposures to information on breast mammography in the course of their training and practice of their profession. This study showed that 21.4% of respondents had done breast mammography at one time in the last two years. This is a higher level of utilization of breast mammography as compared to the study in Jordan¹³ and the study amongst health professionals in Saudi Arabia 12 with a 15.1% and 18.7% utilization respectively. The findings from this study are lower to the second study in Saudi Arabia with a utilization of breast mammography of 37.8%.

This study showed that the age, ethnic group/tribe and the religion of respondents have a statistically significant association with practice of clinical breast examination. The study found that increasing age is slightly associated with increasing practice of CBE. Tribe and religion have a significantly negative association with association with CBE. This could be due to the cultural and religions factors associated with the upbringing of the respondents. This study also shows that the age, ethnic group/tribe and the religion of respondents have a statistically significant negative association with been aware of breast mammography. The age, tribe and religion of the respondents negatively affect awareness of breast mammography. The reasons are as stated earlier, cultural and religious inclinations and backgrounds.

CONCLUSION

There was low level of practice of CBE; very low awareness and use of breast mammography as a breast cancer screening method. There is need for more advocacy and education of the general population as regards breast cancer screening methods including breast self-examination (BSE).

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