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KNOWLEDGE OF BREAST CANCER SCREENING METHODS AND THE PRACTICE OF BREAST SELF-EXAMINATION AMONG FEMALE NURSING STUDENTS IN A NIGERIAN TEACHING HOSPITAL
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E. O. IGHODARO and A. O. AKHIGBE

ABSTRACT

***Background*: Breast cancer is the most common cause of cancer-related death among women worldwide. The incidence of the disease is now increasing in a population that previously had low incidence, moreover, the incidence of early onset of the disease is now on the increase. Mammography still remains the best method for breast cancer screening.**

***Objective*:To assess the knowledge of female nursing students in a tertiary health institution on the screening methods for breast cancer as well as their practice of breast self-examination.**

***Design*: A descriptive cross-sectional study**

***Setting*: School of Nursing, University of Benin Teaching Hospital, Benin City.**

***Subjects*: All female Nursing Students in School of Nursing University of Benin Teaching Hospital, Benin City Edo State Nigeria.**

***Results*: The 211 respondents were from first year to third year with third-year students making up about 50.7%. Majority of the respondents (58%) were within the 21-35years age group. Most of the students (73%) practice breast self-examination. There was a significant association between age, level of study, knowledge of screening methods with the practice of breast self-examination (P<0.0001).**

***Conclusion*: Good knowledge of breast cancer screening methods and the practice of breast self-examination was found among the female nursing students.**

INTRODUCTION

Cancer of the breast is the most common cause of cancer among women in both developed and developing nations, and the cause of cancer death among women globally accounting for about 460,000 deaths in the year 2008 (1).

The incidence of this condition is higher in the developed countries relative to Africa; however recent trends have shown increases in the incidence with a two-fold increase in breast cancer incidence found in Ibadan South Western Nigeria (2).

In Europe and America, the peak age incidence is about 50-70 years while the reported peak age incidence in Nigeria is 45 – 50 years, however an age incidence as low as 16 years was documented in Lagos, Nigeria (3,4).

There has been no known cause of breast cancer or any method of primary prevention; therefore effort at reducing the mortality rate from breast cancer must be directed towards early detection of the disease via the use of secondary prevention methods, such as screening mammography, clinical breast examination, and breast self-examination (BSE). The American Cancer Society and the National Cancer Institute recommends periodic mammography, clinical breast examination and monthly BSE to detect breast cancer at an early stage (5). BSE is the most suitable method for early breast lump detection for majority of our people because of the high level of poverty, ignorance and poor access to healthcare. It is a self-care practice that is easy, convenient, private, safe, no cost and does not require specific equipments. This technique will enable women to be familiar with the structure of their breast and increase their ability to readily recognize any abnormalities in the way the breasts look or feel.

It has been reported that women who correctly practice BSE monthly are more likely to detect a lump in the early stages of its development, and

early diagnosis have been reported to influence early treatment and improve survival rate (6).

There have been conflicting research regarding the value and benefit of BSE in breast cancer diagnosis; however the American cancer society has continued to support the inclusion of BSE as an early detection method. Research have shown that women who received instruction on BSE from health professional demonstrate greater knowledge confidence and are more likely to practice routine BSE than those who become aware of the method from other sources (7).

Nurses and midwives are important providers of healthcare; they give health talk in clinics and conduct training on the practice BSE among others activities.

Furthermore, in developing countries where access to qualitative healthcare is still inadequate, the nurses/midwives are usually the primary health care providers in the remote rural community where advanced cases of breast cancer and mortality rate are higher compared to urban cities (8).

Nurses are among the ideal health professionals who can increase public knowledge of breast cancer and encourage the monthly BSE if they are adequately trained

The main objective of this study is to assess the knowledge of breast cancer screening methods and the practice of BSE among the female nursing students in the University of Benin Teaching Hospital.

MATERIALS AND METHODS

This was a cross-sectional descriptive, study carried out between February-March 2015 among female nursing students of the University of Benin Teaching Hospital. Approval for this study was obtained from the University of Benin Teaching Hospital Ethical Committee. Informed consent was also obtained from the student with full assurance of confidentiality before commencement of the study.

All female nursing students from the School of Nursing University of Benin Teaching Hospital constituted the study population.

Data collection: A pretested self-administered questionnaire was the tool for data collection. The questionnaire elicited information on the socio-demographic characteristics of the student nurses, knowledge of breast cancer screening methods and as well as practice of BSE

Scoring method: For knowledge of breast cancer screening method, the total score was 6, a score of 0-3 was considered poor knowledge while 4-6 was considered to be good knowledge. For Practice of BSE, each correct answer was scored 2 while a wrong answer was scored zero. The total maximum score was 16. A score of 0-8 was considered poor practice while a score 9-16 was considered to be good practice.

Data was analyzed with SPSS version 16 Statistical package and differences were considered significant at $p \leq 0.05$.

RESULTS

Out of the 231 questionnaires administered, 219 students responded, however, 211 questionnaires were adequately completed giving a response rate of 91.3%.

Table1 shows that about 42% of the respondents were below 21 years of age while 58% were 21 years and above. Majority of the respondents were single (95.3%), over 98% were Christians. About half (50.7%) of the respondents were in year three, 40.8% in year one and only 8.5% were in year-two. At the time of this study majority of the year two students were on outside posting. About 3.8% of the respondents had a family history of breast cancer and 45% of the respondents had health professional in their nuclear family.

Table 1
Socio-demographic characteristics of respondents

Variable	Frequency (n = 211)	Percent (%)
Age group in years		
< 21	88	41.9
> 21	122	58.1
Marital Status		
Single	201	95.3
Married	10	4.7
Year in school		
Year-1	86	40.8
Year-2	18	8.5

Year-3	107	50.7
Student's religion		
Christianity	207	98.1
Islam	3	1.4
Traditional	1	0.5
Has family member had breast ca		
Yes	8	3.8
No	203	96.2
Any health professional in nuclear family		
Yes	95	45
No	116	55

The mean knowledge score of the screening methods for breast cancer (Table 2) was 2.9±1.7. 77% of the respondents have heard about screening of women for breast cancer. 77% knew about BSE, 44.8% knew about CBE while 36.8% knew about Mammography Their sources of information vary from formal training (45.1%), media(33.3%) and self-study (21.6%).

Table 2

Distribution of respondents' knowledge in some questions related to screening methods for breast cancer

Variable	Frequency (n = 211)	Percent (%)
Have you ever heard about screening of women for breast cancer?		
Yes	162	76.8
No	49	23.2
What screening methods do u know?		
SBE	162	76.8
CBE	95	44.8
MAMMOGRAPHY	78	36.8
What is your source of information on BSE?		
Media	54	33.3
Self-study	35	21.6
Formal training	73	45.1
Have you had any formal training in BSE?		
Yes	95	45.0
No	116	55.0

The association between the respondent's characteristics and knowledge of screening for breast cancer (Table-3) increased significantly with the age of the respondents (P<0.0001). Sixty-three (63.1%) of those above 21years of age had good knowledge while only twenty-five percent (25%) of those respondents less than 21years of age had good knowledge. while. The study levels of the respondents were significantly associated with the knowledge (p<0.0001). 76% of those in year-3 had good knowledge. While only (14%) percent of those in years one had good knowledge. The presence of a health professional in the nuclear family also significantly influenced their knowledge, (P= 0.009). About 90% of the married respondents had good knowledge (p=0.005).

Table 3
Association between respondents' characteristics and knowledge of screening methods for breast cancer

	Poor knowledge n (%)	Good knowledge n (%)	p-value
Age group			
<21 yrs	66 (75.0)	22 (25.0)	<0.0001
>21 yrs	45 (36.9)	77 (63.1)	
Marital status			
Single	111 (55.2)	90 (44.8)	0.005
Married	1 (10.0)	9 (90.0)	
Study Level			
Year-1	74 (86.0)	12 (14.0)	<0.0001
Year-2	13 (72.2)	5 (27.8)	
Year-3	25 (23.4)	82 (76.6)	
Family history of BC			
Yes	7 (87.5)	1 (12.5)	0.047
No	105 (51.7)	98 (48.3)	
Having health professional in nuclear family			
Yes	41 (43.2)	54 (56.8)	0.009
No	71 (61.2)	45 (38.8)	

Multivariate analysis was done (Table 4), using binary logistic regression of the factors associated with knowledge of screening methods for breast cancer of the respondents revealed, that only the study level is a significant predictor of knowledge of screening methods for breast cancer. The respondents in year-3 were about 14 times more likely to have good knowledge of screening methods for breast cancer compared to those in year-1(OR=13.9, 95% CI=6.2-31.26).

Table 4
Binary logistic regression of respondents' factors on knowledge of screening methods for breast cancer

Variable	OR	(SE) (Lower)	95% CI (Upper)	95% CI	p-value
Age group					
<21 years (ref)					
>21 yrs	2.09	0.39	0.98	4.49	0.058
Marital status					
Single (ref)					
Married	5.76	1.19	0.56	58.92	0.140
Study level					
Year-1 (ref)					
Year-2	1.46	0.67	0.39	5.41	0.571
Year-3	13.93	0.41	6.21	31.26	<0.0001
Family history of breast cancer					
Yes	0.12	1.21	0.01	1.26	0.077
No (ref)					
Having health professional in nuclear family					
Yes	1.17	0.37	0.57	2.40	0.664
No (ref)					

The mean BSE practice score was 4.1+1.8. Majority of the respondents(73%) had good practice, as almost

half of them(45%) had formal training in BSE. About 90% of the respondents that practice BSE do so at least once a month as shown in table 5.

Table 5

Distribution of respondents' practice of BSE in some questions related to the practice of BSE

Variable	Good practice Frequency (%)	Poor practice Frequency (%)
How often do you do it (monthly)	133 (88.7)	17(11.3)
Look at breast in mirror with arms at side	79 (37.4)	132(62.6)
Look at breast in mirror with arm raised over head	136 (64.5)	75(35.5)
Examine breast while lying down, place a towel or pillow under shoulder before examining breast on that side.	119 (56.4)	92 (43.6)
Use right hand to examine left breast and left hand to examine right breast.	145 (68.7)	66 (31.3)
Squeezing the nipple of each breast to look for discharge	127 (60.2)	84 (39.8)
Routinely palpate the breast in the bath with soapy water	121 (57.3)	90 (42.7)

Table-6 showed, that practice was significantly improved with the age of respondent (p<0.0001). Over 86% of those above 21years of age had good practice. The study level was also significantly associated with practice; (P<0.0001), with 94% of those in year three having good practice. The presence of a health professional in the nuclear family was also a significant factor that improved their practice. Majority of the respondents (90%) who had good knowledge of screening methods for breast cancer also had a significant association (P<0.0001), with practice of BSE.

Table 6

Association between respondents' characteristics and practice of BSE

	Bad practice n (%)	Good practice n (%)	p-value
Age group			
<21 years	39 (44.3)	49 (55.7)	<0.0001
>21 years	17 (13.9)	105 (86.1)	
Marital status			
Single	56 (27.9)	145 (72.1)	0.214
Married	1 (10)	9 (90)	
Study Level			
Year-1	46 (53.5)	40 (46.5)	<0.0001
Year-2	5 (27.8)	13 (72.2)	
Year-3	6 (5.6)	101 (94.4)	
Family history of BC			
Yes	3 (37.5)	5 (62.5)	0.496
No	54 (26.6)	149 (73.4)	
Having health professional in nuclear family			
Yes	12 (12.6)	83 (87.4)	<0.0001
No	45 (38.8)	71 (61.2)	
Knowledge of breast cancer			
Poor	40 (43.5)	52 (56.5)	<0.0001
Good	17 (14.3)	102 (85.7)	
Knowledge of screening methods			
Poor	48 (42.9)	64 (57.1)	<0.0001
Good	9 (9.1)	90 (90.9)	

Multivariate analysis using binary logistic regression (Table7), showed study level and the presence of a health professional in the nuclear family to be significant predictors of the practice of BSE. Those in year three were about 9 times more likely to have good practice of BSE compared with those in year one (OR = 8.69, 95% CI = 2.80 – 26.95), and those with health professional in nuclear family were about 3 times more likely to have good practice of BSE (OR = 2.81, 95% CI = 1.25 – 6.34).

Table 7
Binary logistic regression of respondents' factors on practice of BSE

Variable	OR	(SE) (Lower)	95% CI (Upper)	95% CI	p-value
Age group					
<21 years (ref)					
>21 yrs	1.59	0.42	0.70	3.64	0.271
Study level					
Year-1 (ref)					
Year-2	2.35	0.61	0.72	7.70	0.158
Year-3	8.69	0.56	2.80	26.95	<0.0001
Having health professional in nuclear family					
Yes	2.81	0.41	1.25	6.34	0.013
No (ref)					
Knowledge of breast cancer					
Poor (ref)					
Good	1.64	0.42	0.72	3.73	0.235
Knowledge of screening methods					
Poor (ref)					
Good	1.54	0.53	0.55	4.35	0.412

DISCUSSION

Breast cancer is a major cause of cancer death among women in both developed and developing nations.1Early diagnosis through screening has been found to reduce mortality rate of breast cancer and BSE is one of the recommended screening methods for breast cancer control.9 In a developing country like Nigeria where access to qualitative healthcare is still very difficult, the nurses/midwives are usually the primary health care provider in the remote rural communities where advanced cases of breast cancer and mortality rate is higher compared to urban cities (10).

The present study shows 77% of the respondent have heard about screening method for breast cancer and almost half (46.9%) of the respondent had good knowledge concerning all the three recommended screening method Majority of them knew about BSE (77%), while CBE and MMG had 44.8% and 36.8% respectively. This result is similar to the findings among nurses by Oluwatosin 11 in Ibadan, Nigeria where 80.9%, 40% and 30% for BSE, CBE, and MMG respectively was reported. Lemlem *et al* 12 study in Addis Ababa, Ethopia, also reported similar findings for knowledge of screening methods among nurses, 74.8%, 44.4% and 38.5% for BSE, CBE and MMG respectively.

The relatively lower knowledge of BSE (77%) in this study compared with studies involving Practicing nurses in other part of Nigeria; Kayode *et al*, 100% in Kano (13) is probably due to the difference in the populations studied, as our respondent where nursing students still in training. Studies of Knowledge of BSE among other groups of respondents in other part of the world showed Saadeldin et al 86%(14) among final year medical students in Sudan.

Formal training was the major source of information on BSE(45.1%) among our respondents and this is similar to the result in a study done in Saudi Arabia, among similar population, where about 43% got information on BSE from the college training curriculum (7).

Majority (73%) of the respondent had good practice. This practice rate is similar with results of other studies Akhigbe *et al* 77.6% (15) in a study among health workers in Benin City, Nigeria. Abdulaziz *et al* 66% (7)among Nursing students in Saudi Arabia. Our results, however, differ from the low practice rates of 3% by Nde *et al* (16) in Cameroon among female university undergraduates. The difference in practice rate may be attributed to the fact that our

respondents (nursing students) were expected to be more knowledgeable on health related issues than the other studied populations.

This study shows that the age of respondent, Study level, the presence of a health professional in the nuclear family and good knowledge of screening methods had significant associations with practice of BSE (P<0.0001). This findings is similar with other studies which show significant correlation between age, nursing educational level and the practice of BSE (17, 18).

In conclusion, this study showed good knowledge of breast cancer screening methods and the practice of breast self-examination among the female nursing students.

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