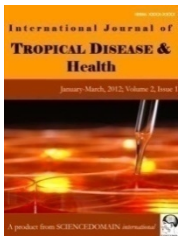

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Assessment of Breast Cancer Screening Practices among Women of Reproductive Age in Benin City, Edo State

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Author's contribution

The sole author designed, analyzed and interpreted and prepared the manuscript.

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ABSTRACT

Breast cancer is becoming very prevalent in developing countries including Nigeria which is now being bedeviled by the twin public health challenge of both communicable and non-communicable diseases.
Aims: This study was conducted to assess breast cancer knowledge and screening practices among women of reproductive age in Benin City, with a view to improving breast cancer screening practices and minimize late presentation and attendant consequences.
Study Design: A descriptive cross sectional study design was utilized for this study.
Place and Duration of Study: This study was carried out in Central Hospital in Benin City, Edo State between September and December, 2013.
Methodology: This study was health facility based involving researcher administration of semi-structured questionnaires to 235 consenting women of reproductive age (15-49years) attending immunization clinics in Benin City. The data collected were analyzed using IBM Statistical Package for Sciences (SPSS) version 22.0 with statistical significance set at $p< 0.05$ and 95% Confidence Interval.
Results: The mean age and parity of respondents studied were 28.8±7.4 years and 2.19±1.85

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children respectively. Two hundred and seventeen (92.3%) of the women studied, were aware of breast cancer with majority 201(92.6%) having poor knowledge of breast cancer. Furthermore, the practice of breast examination was 143 (65.9%) among respondents studied with self-breast examination accounting for 106(74.1%). In relation to breast cancer screening practice, primary level of education (OR=0.323; 95% CI=0.141 – 0.742) was the only significant predictor identified that less likely influenced the practice.

Conclusion: This study identified a high awareness with poor level of knowledge on breast cancer among women of reproductive age. The practice of breast examination was high with level of education identified as a significant predictor for breast cancer screening practice. There is need to create and strengthen breast cancer awareness campaign through all available media platforms and in schools not only for improved breast cancer screening practices but very importantly to improve knowledge on its presentation, risk factors and benefits of early detection and treatment for better health outcome.

Keywords: Benin City; breast; breast cancer screening; knowledge; reproductive age; women.

1. INTRODUCTION

Breast cancer is the most common cancer in women globally, both in the developed and less developed countries [1]. It is estimated that over 508,000 women died in 2011 as a result of breast cancer.[1] Although, breast cancer previously thought to be a disease of the developed world but with almost 50% percent of all breast cancer cases and 58% of breast cancer deaths now occurring in less developed countries, this line of thought has now changed [2]. Breast cancer survival rates vary greatly worldwide, ranging from 80% or over in North America, Sweden and Japan to around 60% in middle income countries and below 40% in low income countries [3]. This low survival rates in less developed countries are complicated mostly by late presentation which can be explained by the lack of early detection program, as well as by the lack of adequate diagnosis and treatment facilities. There is increasing evidence that early detection and treatment remains key in improving breast cancer outcome and survival which remains the corner stone of any breast cancer control program [4,5].

Research has revealed that breast cancer presentation occurs about 10 years earlier among Nigerian women than their western counterparts [6-8], this has been attributed to increasing adoption of western lifestyles and diet further compounded by poor knowledge and attitude towards cancer related issues [9].

The level of knowledge on breast cancer remains poor in Benin City [8,10], this findings has been further buttressed in other studies [11,12] indicating poor knowledge of breast cancer and breast cancer screening services among women. In relation to the what can be done to address the rising scourge of breast cancer several studies [4,5,13,14] have emphasized that early detection through appropriate uptake of breast cancer screening intervention remains key to its prevention and cure. But breast cancer screening practices remain poor in developing countries including Nigeria [8,13,15-18]. Based on the aforementioned early breast cancer detection through appropriate screening services such as Breast Self-Examination(BSE), Clinical Breast Examination(CBE) and mammography remains a critical step to reducing breast cancer related morbidity and mortality. To address this growing public health challenge the American Cancer Society (ACS) recommends mammography and CBE every year for women aged 40years, while monthly BSE as an option for women aged 20-40 years [19].

This step remains an efficient approach to detecting breast pre-cancerous lesions at earlier stages for better prognostic outcome [4-5,19]. This study was therefore conducted to assess breast cancer knowledge and screening practices among women of reproductive age in Benin City, with a view to improving breast cancer screening practices and minimize late presentation and attendant consequences.

2. MATERIALS AND METHODS

A descriptive cross sectional study was conducted involving 235 consenting women of reproductive age (15-49 years) attending immunization clinic at Central Hospital Benin City. The hospital provides primary, secondary and specialist health care services to clients within and outside Edo State. It also has a work force structure comprising doctors, nurses, pharmacists, laboratory scientists, social workers, record officers, administrative Staffs etc

and offers residency training in some medical specialties such as Obstetrics and Gynecology and Family Medicine.

The health facility is located along Sapele road in Oredo Local Government Area of Edo State. The study was conducted between November and December 2013. The sample size was calculated using Cochran's formulae for descriptive study [20] based on a 17.7% prevalence of breast cancer screening practice in Benin City from a previous study [14]. Respondents were recruited to participate from the daily Immunization clinic list of attendees by simple random sampling technique using a table of random numbers till the required sample size was reached. Researchers administered semi-structured questionnaires for the study after obtaining written informed consent from respondents. Questionnaires developed by researcher were utilized for data collection, following Institutional approval obtained from Department of Hospital Services, Edo State Ministry of Health and informed consent from respective respondents. IBM SPSS version 22.0 was utilized for data analysis with statistical tests of association carried out at level of significance set at $p \leq 0.05$ and 95% confidence interval. Breast cancer awareness in this study was assessed to mean if the respondent had ever heard of the term breast cancer or breast cancer screening prior to the interview while knowledge of breast cancer was assessed based on a 23 point scoring system developed in relation to 23 questions relating to breast cancer risk factors, mode of presentation of breast cancer, persons to carry out breast cancer screening and finally the benefit of breast cancer screening, each correct response is scored '1' while for every incorrect response '0'. A point score of '16-23' was categorized as Good Knowledge, while '1-15' as poor knowledge and '0' as No Knowledge. Breast cancer screening practice was categorized into 'Yes' and 'No' based on response to the previous history of utilization of any of the three breast cancer screening tests i.e BSE, CBE and Mammography as at the time of the survey.

3. RESULTS

The mean age and parity of respondents studied was 28.8±7.4 years and 2.19±1.85 children respectively, with Christianity 218 (92.8%) being the predominant religion, followed by Islam 15(6.4%) and African Traditional Religion 2(0.8%). One hundred and seventy (72.3%) of respondents studied were married and 65 (27.7%) single. One hundred and three (43.8%) of respondents had completed secondary level of education, 62 (26.4%) had primary completed level of education, 56(23.8%) tertiary completed level of education while 14(6.0%) had no formal education. Furthermore, in relation to employment status 172(83.2%) of the respondents studied were employed while 63 (26.8%) unemployed. Two hundred and seventeen (92.3%) of the women studied were aware of breast cancer while 18(7.7%) were not aware, with news media 204(94.0%) being the predominant source of information followed by health care providers 173(79.7%), Family and friends 113(52.1%), internet 25(11.5%) and 11(5.1%) for school.

In relation to knowledge on breast cancer screening the following responses were obtained; 185(85.3%) to detect problem early, 121(55.8%) to help initiate treatment early, 91(41.9%) to prevent complication. Table 1 (See Appendix) highlights respondents responses on risk factors of breast cancer as follows; Family history 120 (55.3%), Genetic factors 98 (45.2%), Cigarette smoking 84(38.7%) Alcohol consumption 73(33.6%), Contraceptive usage 66(30.4%), Diet 55 (25.3%), Early onset of sexual exposure 37(17.1%), Keeping money in bra 9 (4.1%), Contact with breast cancer patients 4(1.8%) poor personal hygiene 4(1.8%), continuous wearing of bra 3 (1.4%). Also included in the table are responses on persons to carry out breast examination and include Doctor 152 (70.1%) self 150 (69.1%), Nurse 62 (28.6%), Family members 6(2.8%), No Idea 5 (2.3%).In relation to knowledge on breast cancer 201(92.6%) of respondents studied had poor knowledge while 16(7.4%) had good knowledge of breast cancer (See Fig. 1).

In relation to practice of breast cancer screening Table 2 (see Appendix) shows that 143 (65.9%) of the respondents studied had previous breast examination while 74 (34.1%) had not. In relation to who carried out the examination; self 102(71.3%), Doctor 29 (20.3%), Nurse 13 (9.1%) while for place of examination 106 (74.1%) home, Health facility 34 (23.8%), Health screening center 3 (2.1%). The result of screening revealed normal breast findings in 139 (97.2%) while 4 (2.8%) had breast lumps. While of the four who had breast lumps 2 (50.0%) had it removed while the other two (50.0%) still had the lump as at time of study.

In relation to factors associated with knowledge of breast cancer among respondents Table 3

(See Appendix) shows that age grouping in years (p=0.480), marital status (p=0.130), religion (p=0.953) and educational status (p=0.831), employment status (p=0.246) and parity (p=0.135) of respondents were not significant factors associated with it.

Furthermore, in relation to factors associated with breast cancer screening practices Table 4 (See Appendix) shows that only educational status (p=0.023) was the significant factor associated with breast cancer screening among respondents studied while age grouping in years (p=0.481), Religion (p=0.113), employment status (0.065), Marital status (p=0.084) and parity (p=0.051) and knowledge on breast cancer (p=0.058) were not significant factors associated with breast cancer screening practices among respondents. Further multivariate analysis identified educational status (OR=0.323; 95% CI = 0.141 - 0.742; p=0.008) as the only significant predictor of breast cancer screening practices among respondents studied.

4. DISCUSSION

The respondents studied had a mean age in the range of mid-20's and mid-30's years, this is not unusual considering that this category of persons in our setting are more likely to be nursing mothers who are likely to visit and utilize immunization clinic services in health facilities. Furthermore, breast cancer occurs earlier in developing countries compared to developed world [6-8] and if breast cancer knowledge and cost effective breast cancer screening intervention scan be disseminated to this category of persons in resource poor settings like Nigeria the problems of late presentation can be minimized. This study also identified a high breast cancer awarenessamong respondents studied with health care providers being their predominant source of information, although in relation to actual knowledge on breast cancer in terms of presentation and risk factors, majority of respondents had poor knowledge. A similar finding on health care providers being predominant source of information on breast cancer was previously reported in Northeast Nigeria [21]. The level of knowledge identified is quite unusual considering the study being health facility based, with health care providers identified as the predominant source of information, this raises concerns on the content and quality of information conveyed by health care providers during health sessions and the need to reemphasize training and retraining programme for health care providers to improve the content and quality of care especially via health education intervention. The high level of awareness on breast cancer identified among respondents may be attributed to the urban setting of the study, in addition to the relatively high educational status of respondents as a good proportion had completed secondary level of education. This study also highlighted the fact that awareness and knowledge about health related events or intervention are not the same but can be linked. This disparity between awareness and knowledge on breast cancer was equally reported among women in Abakaliki in Ebonyi State [22]. The secondary completed educational status of most of respondents studied is similar to findings from the 2013 NDHS report [23]. The poor knowledge on breast cancer identified in this study is similar to findings reported in other studies in Benin City [8,10], Northeast Nigeria [21] and in other studies [11,12].

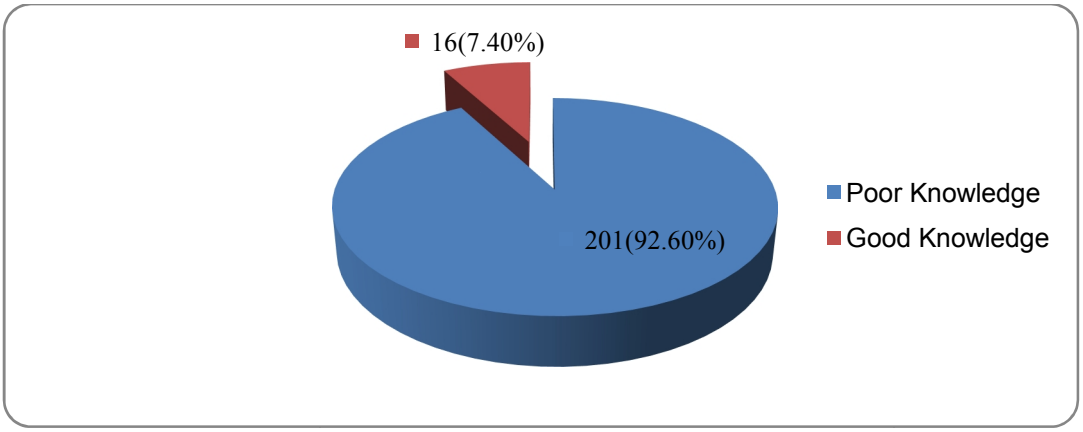

Fig. 1. Knowledge of breast cancer among respondents

Furthermore, this study identified a 63.5% breast cancer screening practice among respondents studied with marked gap existing between knowledge and breast cancer screening practice. It is also possible that although respondents studied did not have good knowledge on breast cancer screening they were still able to engage in good health practices possibly due to the recommendation by health care providers, this in a way buttresses the significant influence health care providers can have on clients imbibing good health practices. This good breast cancer screening practices among respondents studied is in contrast to study findings on breast cancer screening practices which is reported to be poor in developing countries including Nigeria [8,13,15-18] and also reported in Tunisia and Europe [11,12]. This study identified that educational status of respondents was the only significant predictor for breast cancer screening among respondents studied as the practice increased with increasing educational status of respondents. Similar finding were equally reported in other studies [10,24]. It is also important to highlight that self-breast examination (SBE) was the most common breast screening practice among respondents followed by clinical-breast examination (CBE); this further buttressed the fact that even when knowledge on health intervention is poor in terms of cause and risk factors etc., good health practices can still be adopted by clients when their attention is drawn to it as identified in this study. Mammography was not mentioned as a breast cancer screening option by respondents studied, this may be as a result of poor knowledge of its role in relation to breast cancer screening in addition to the possible high cost implication for the usage. This study equally identified positive and proactive steps taken by two of the four reported instances of breast lump who ensured the removal. This action is reassuring as early detection and treatment through cost effective breast cancer screening interventions such as BSE and CBE remain key to identifying breast cancer at precancerous stages and prevent late presentation for better prognostic outcome, this has been continuously reechoed in several studies [4,5,13,14,19].

5. CONCLUSION

This study identified a high awareness with poor level of knowledge on breast cancer among women of reproductive age. The practice of breast examination was high with educational status identified as a significant predictor for breast cancer screening practice among women.

ETHICAL APPROVAL

Institutional approval was obtained from Department of Hospital Services, Edo State Ministry of Health before commencement of the study and written informed consent from respective respondents before questionnaire administration.

6. RECOMMENDATION

There is need to create and strengthen breast cancer awareness campaign through all available media platforms, in health facilities and in schools not only for improved breast cancer screening practices but very importantly to improve knowledge on its presentation, risk factors and benefits of early detection and treatment for better health outcome

LIMITATION OF STUDY

The findings of this study were based on self-report as it was not possible to validate claims made by respondents in the course of questionnaire administration.

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COMPETING INTERESTS

Author has declared that no competing interests exist.

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APPENDIX

Table 1. Knowledge of Risk factors on breast cancer and persons to conduct breast screening

Variable	Frequency	Percent (%)
Risk factors of breast cancer		
Family history	120	55.3
Genetic factors	98	45.2
Cigarette smoking	84	38.7
Alcohol consumption	73	33.6
Contraceptive usage	66	30.6
Diet	55	25.3
Early onset of sexual exposure	37	17.1
Keeping money in bra	9	4.1
Contact with breast cancer patients	4	1.8
Poor personal hygiene	4	1.8
Continuous wearing of bra	3	1.4
Knowledge of person to carry out breast examination		
Doctor	152	70.1
Self	150	69.1
Nurse	62	28.6
Family members	6	2.8
No Idea	5	2.3

N.B It is important to note that the following risk factors were included as distractors as such are incorrect risk factors: Early onset of sexual exposure, Close contact with breast cancer patients, keeping money in bra and continuous wearing of bra.

Table 2. Breast Cancer screening practices by respondents with place of breast Examination and action taken following breast examination findings

Variable	Frequency	Percent (%)
Previous history of breast examination		
Yes	143	65.9
No	74	34.1
Category of breast examiner		
Self	102	71.3
Doctor	29	20.3
Nurse	13	9.4
Place of breast examination		
Home	106	74.1
Health Facility	34	23.8
Screening Centre	3	2.1
Results of breast screening		
Normal breast findings	139	97.2
Presence of breast lump	4	2.8
Action taken by respondent		
Nothing done	2	50.0
Breast lump removed	2	50.0

Table 3. Factors associated with knowledge of breast cancer among respondents

Variable	Knowledge of Poor	Breast cancer Good	Test Statistic	*P*
Educational status			**F=0.854**	**0.831**
None	8(88.9)	1(11.1)		
Primary Completed	48(94.1)	3(5.9)		
Secondary Completed	93(92.1)	8(7.9)		
Tertiary Completed	52(92.9)	4(7.1)		
Employment status			**X^2=2.083**	**0.246**
Employed	142(91.0)	14(9.0)		
Unemployed	59(96.7)	2(3.3)		
Marital status			**X^2=2.291**	**0.130**
Single	61(96.8)	2(3.2)		
Married	140(90.9)	14(9.1)		
Age group (Years)			**X^2=2.688**	**0.488**
15-24	91(94.8)	5(5.2)		
25-34	100(90.1)	11(9.9)		
35-44	1(100.0)	0(0.0)		
45-54	9(100.0)	0(0.0)		
Parity			**F=3.671**	**0.135**
Nulliparous	54(98.2)	1(1.8)		
Multipara	129(90.2)	14(9.8)		
Grand multipara	18(94.7)	1(5.3)		
Religion			**X^2=0.096**	**0.053**
Christianity	189(92.6)	15(7.4)		
Islam	11(91.7)	1(8.3)		
ATR	1(100.0)	0(0.0)		

Table 4. Factors Associated with breast cancer screening practices of respondents

Variable	Breast screening practice		Test statistic	*p*	OR	95%CI
	No	Yes				
Educational status			**X^2=9.533**	**0.023**		
None	4(44.4)	5(55.6)			0.264	0.055-1.268
1°	26(51.0)	25(49.0)			0.323	0.141-0.742
2°	29(28.7)	72(71.3)			0.833	0.390-1.777
3°	15(26.8)	41(73.2)			1	
Employment status			**X^2=3.416**	**0.065**		
Employed	59(37.8)	97(62.2)				
Unemployed	15(24.6)	46(75.4)				
Marital status			**X^2=2.993**	**0.084**		
Single	16(25.4)	47(74.6)				
Married	58(37.7)	96(62.3)				
Age group			**X^2=2.467**	**0.481**		
15-24	30(31.2)	66(68.8)				
25-34	40(36.0)	71(64.0)				
35-44	1(100.0)	0(0.0)				
45-54	3(33.3)	6(66.7)				
Parity			**X^2=5.946**	**0.051**		
Nulliparous	15(27.3)	40(72.7)				
Multipara	48(33.6)	95(66.4)				
Grand multipara	11(57.9)	8(42.1)				
Religion			**F=3.668**	**0.113**		
Christianity	67(32.8)	137(67.2)				
Islam	7(58.3)	5(41.7)				
ATR	0(0.0)	1(100.0)				
Level of Knowledge			**X^2=3.587**	**0.058**		
Poor	72(35.8)	129(64.2)				
Good	2(12.5)	14(87.5)				

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