

Knowledge of breast cancer and practice of breast self examination among female senior secondary school students in Abuja, Nigeria

A.R. ISARA, C.I. OJEDOKUN

Department of Community Health, College of Medical Sciences, University of Benin, Benin City, Nigeria

Key words

Breast cancer • Breast self examination • Secondary school students

Summary

Introduction. Breast cancer is a public health problem that is increasing throughout the world especially in developing countries. The study was aimed at assessing the knowledge of breast cancer and practice of breast self examination (BSE) among female senior secondary school students in the municipal council area of Abuja, Nigeria.

Methods. This descriptive cross sectional study was carried out among female senior secondary school students from selected schools in the municipal area council of Abuja. The tool for data collection was a structured self administered questionnaire. Data were analysed using SPSS version 16.0.

Results. Two hundred and eighty-seven students participated in the study. Their mean age was 16.5 ± 1.4 years. A greater proportion of respondents 163 (56.8%) had poor knowledge of

breast cancer while 217 (75.6%) had poor knowledge of BSE. Only 114 (39.7%) of the respondents knew that being a female was a risk factor for breast cancer and the least known risk factors were obesity and aging. The major source of information for breast cancer and BSE among the respondents was the mass media. Only 29 (10.1%) of respondents had practiced BSE. Knowledge of BSE was significantly associated with BSE practice.

Conclusion. This study revealed that female secondary school students have poor knowledge of breast cancer. A good proportion of them knew that BSE could be used as a screening method for breast cancer but only few had practiced BSE. There is need for adequate health education on breast cancer and BSE among adolescent females in Nigeria.

Introduction

Breast cancer is the top cancer in women worldwide and is increasing particularly in developing countries where the majority of cases are diagnosed in late stages [1]. It also comprises 16% of all female cancers and is more common in women than men [1]. Breast cancer is curable if detected early and there are two major components of early detection of breast cancer: education to promote early diagnosis and screening [2]. Most of the total deaths from the disease are accounted for in the developing world. The low survival rates in less developed countries may be explained mainly by lack of early detection programmes, lack of adequate diagnosis and treatment facilities which results in a high proportion of women presenting with late stage disease.

It is the second principal cause of cancer deaths among women in the world as well as Nigeria [3, 4]. The actual burden of breast cancer in Nigeria is unknown due to lack of adequate cancer statistics [5]. However, the prevalence rate of breast cancer in study in Nigeria was 116 per 100,000 and 27,840 cases were expected to occur in 1999 [4]. Nigerian women usually present with advanced stages of the disease at which time little or no benefit can be derived in form of therapy. Further reports show that majority of cases occurred in pre-menopausal

women and the mean age of occurrence ranged between 43-50 years across regions in Nigeria and the youngest age recorded was 16 years from Lagos [6].

Adolescence is a transition period between childhood and adulthood and during this time, significant changes occur in the body. These group of females are just beginning to learn about their bodies and in Nigeria where national screening programmes are not properly established, women can be made 'breast-aware' with cheap early detection measures such as breast self examination (BSE) which may in turn lead to an earlier diagnosis of breast cancer. The incidence of breast cancer among younger women seems to be increasing. A report in Nigeria showed that the peak age of incidence was 42.6 years and 12% of cases occurred before the age of 30 years [4]. More young girls are being exposed to risk factors (apart from genetic or family) such as alcohol, tobacco, obesity, late age at first pregnancy (> 30 years) due to education and late marriages.

Studies in Nigeria have shown that most women have poor knowledge of breast cancer and its risk factors [5, 7-9]. Reports from Egypt and Hong Kong also showed the same results [10, 11]. A study conducted among female health professionals in Lagos, Nigeria indicated that knowledge of breast cancer risk factors was low among them excluding doctors [12]. Few stud-

ies have been done on knowledge of breast cancer and practice of BSE among female secondary school students [13, 14].

The screening methods currently used for early detection of breast cancer include BSE, clinical breast examination (CBE) and mammography. Mammography is the most expensive and involves substantial financial and manpower resources and this is not very feasible for developing countries like Nigeria. However, BSE offers women a chance to learn what is normal for them so that they can recognize any changes immediately. Breast self examination is seen as an option for women in their 20's and for young adolescents girls especially in the developing world, the benefits and limitations of BSE should be made known and the earlier the better. Young breast cancer patients have been shown to have a lower rate of survival than older patients due to being diagnosed at advanced stages. The five year survival rate of breast cancer in Nigeria is less than 10% [15]. This is in sharp contrast to the over 70% 5 year survival rate in Western Europe and North America [5].

The adolescent period is a time that provides teaching opportunities for shaping health behavior into adulthood. Teaching BSE and issues about breast cancer as early as possible will go a long way to encourage positive behavior towards BSE, create a 'breast-awareness' consciousness and can lead to seeking regular professional breast examination/screenings later in life. The objective of this study was therefore to assess the knowledge of breast cancer and its associated risk factors among female senior secondary school students in the Federal Capital Territory (FCT), Abuja, Nigeria, their knowledge of BSE as a screening method for breast cancer and their practice of BSE with a view to creating increased awareness of breast cancer and breast self examination among the adolescent population.

Methods

This descriptive cross sectional study conducted from January 2011 to March 2011 was carried out among female senior secondary school students in senior secondary class 2 (SS2) and senior secondary class 3 (SS3) which represent the penultimate and final classes respectively in high school education in Nigeria. Approval for the study was obtained from the Federal Capital Territory (FCT) Secondary Education Board. Informed consent was also obtained from the students with full assurance of confidentiality before the commencement of the study.

SELECTION OF PARTICIPANTS

A total of 300 students were selected for the study using a multistage sampling technique. Out of the list of 44 schools in the municipal area council of the FCT Abuja, five schools were selected by simple random sampling using the table of random numbers. In each of the selected schools, two arms each of the classes for SS2 and SS3 were selected by simple random sampling also using the table of random numbers. Finally, in each of the selected

arm, the class register was used as a sampling frame and using an appropriate sampling interval, derived from the total number of students in the class and the allocated sample size, final respondents were selected using systematic random sampling technique.

DATA COLLECTION

The tool for data collection was a structured, self administered questionnaire. The questionnaire was pretested among 60 SS2 and SS3 students in a school located in another area council of the FCT. The questionnaire was then reviewed and necessary modifications were made before commencement of the study. This questionnaire was used to collect qualitative information such as socio-demographic data of the student, their knowledge of breast cancer and its risk factors, their knowledge, attitude and practice of BSE.

STATISTICAL ANALYSIS

Data analysis was carried out using SPSS version 16.0 statistical software. Twelve questions were used to assess respondents' knowledge of breast cancer while 3 questions were used to assess their knowledge of BSE. A score of 2 was assigned to each correct answer while zero was assigned to incorrect answers. For knowledge of breast cancer, the total score was 24. A score of 0-11 was considered poor knowledge, 12-18 was considered good knowledge and 19-24 was considered excellent knowledge. The total score for knowledge of BSE was 6. A score of 0-3 was considered poor knowledge and a score of 4-6 was considered good knowledge. Statistical test for association between different variables was also carried out using the chi square test with level of significance set at $p < 0.05$.

Results

Out of the 300 questionnaires administered to the respondents, 287 were fully completed giving a response rate of 95.7%. Table I shows the socio-demographic characteristics of the respondents. The age of the respondents ranged from 13-22 years with a mean age of 16.5 ± 1.4 years. One hundred and forty seven (51.2%) of them were in SS2 and 140 (48.8%) in SS3 with most being Christians 229 (79.8%). Majority of their parents had tertiary education, 200 (69.7%) of fathers' and 146 (50.9%) of mothers'. Very few of the parents had no formal education 17 (5.9%) and 8 (2.7%) for mothers' and for fathers' respectively.

All of the respondents had heard of breast cancer. The major source of information on breast cancer for most of the respondents was the mass media 210 (73.2%), followed by health professionals 38 (3.2%), parents/relatives 19 (6.6%) and teachers 8 (2.8%). The least was the internet 1 (0.3%). More than half of the respondents 163 (56.8%) had poor knowledge of breast cancer, 108 (37.6%) had good knowledge and only 16 (5.6%) had an excellent knowledge of breast cancer (Tab. II). The major risk factors associated with breast cancer men-

Tab. I. Socio-demographic characteristics of respondents.

Variable	Frequency (N = 287)	Percent
Age group in years		
13-15	67	23.3
16-18	196	68.3
19-22	24	8.4
Class		
SS2	147	51.2
SS3	140	48.8
Religion		
Christianity	229	79.8
Islam	58	20.2
Level of education of mother		
None	17	5.9
Primary	22	7.7
Secondary	102	35.5
Tertiary	146	50.9
Level of education of father		
None	8	2.7
Primary	13	4.5
Secondary	66	23.0
Tertiary	200	69.7

Tab. II. Respondents knowledge of breast cancer.

Knowledge	Frequency	Percent
Poor	163	56.8
Good	108	37.6
Excellent	16	5.6
Total	287	100

tioned by the respondents included being a female 114 (39.7%), menopause at 55 years and above 111 (38.7%), menarche at 12 years and below 99 (34.5%) and a positive family history 81 (28.2%). The least known risk factors were obesity, 35 (12.2%) and ageing, 25 (8.7%). Only about half 119 (49.4%) of the students knew that a

painless lump was the most common early presentation of breast cancer.

More than half of the respondents, 162 (56.4%) had heard of BSE with their sources of information being mass media 85 (52.5%), health professional 59 (30.9%), family members 15 (9.3%), school teachers 7 (4.3%) and friends 2 (1.2%). Although, about half of the respondents 150 (52.3%) knew that BSE can be used to detect breast cancer, most of them had no idea of the correct timing for BSE as only 36 (12.5%) knew it was a few days after menstruation. Also, only 54 (18.8%) of them knew that BSE should be performed once a month. Overall, only 70 (24.4%) of the respondents had good knowledge of BSE.

In this study, only 29 (10.1%) respondents had ever performed BSE. The reasons given for non performance of BSE was that they did not know how to do it, 170 (65.9%), followed by those claim they do not expect to develop breast cancer, 56 (21.7%), not having any family member with breast cancer, 29 (11.2%) and fear of finding a lump, 3 (1.2%). However, majority 213 (82.6%) of the respondents who had never performed BSE were willing to practice it if they were taught how to do so.

The association between the socio-demographic characteristics of the respondents including their knowledge of BSE and their knowledge of breast cancer and practice of BSE is shown in Tables III and IV. The respondents' knowledge of breast cancer increased with their age and class. A higher proportion of the students with poor knowledge of breast cancer are those whose parents had tertiary level of education. However, there was no statistically significant association between the socio-demographic characteristics of the respondents and their knowledge of breast cancer. The practice of BSE was seen more in those respondents in SS3 and those whose parents had tertiary level of education. Again, there was

Tab. III. Socio-demographic characteristics of respondents and their knowledge of breast cancer.

Variable	Knowledge of breast cancer Frequency (%)			χ^2	p value
	Excellent	Good	Poor		
Age in years					
13-15	4 (6.0)	22 (32.8)	41 (61.2)	3.287	0.511
16-18	12 (6.1)	74 (37.8)	110 (56.1)		
19-22	0 (0.0)	12 (50.0)	12 (50.0)		
Class					
SS2	10 (6.8)	57 (38.8)	80 (54.4)	1.219	0.544
SS3	6 (4.3)	51 (36.4)	83 (59.3)		
Mothers' education					
None	0 (0.0)	11 (64.7)	6 (35.3)	9.574	0.114
Primary	2 (9.0)	10 (45.5)	10 (45.5)		
Secondary	4 (3.9)	40 (39.2)	58 (56.9)		
Tertiary	10 (6.8)	47 (32.2)	89 (61.0)		
Fathers' education					
None	0 (0.0)	4 (50.0)	4 (50.0)	11.092	0.086
Primary	1 (7.7)	7 (53.8)	5 (38.5)		
Secondary	1 (1.5)	33 (50.0)	32 (48.5)		
Tertiary	14 (7.0)	64 (32.0)	122 (61.0)		

no statistically significant association between the socio-demographic characteristics of the respondents and their practice of BSE. A higher proportion 22 (31.4%) of respondents who had good knowledge of BSE had practiced BSE. This association was statistically significant ($p = 0.001$).

Discussion

The mean age of 16.5 ± 1.4 years seen in this study is consistent with the educational system in Nigeria which requires students to enter secondary school at the age of 12 years and leave at the age 18 years. This was similar to the mean age of 16.0 ± 0.9 years reported in a study in Turkey among high school students [13]. It was commendable that the level of awareness concerning breast cancer and BSE among the students was high as all of them had heard of breast cancer and more than half had heard of BSE. Breast cancer awareness has in the last few years received a major boost in Nigeria. The mass media has been instrumental in this effort and this was reflected in this study as it proved to be the major source of information for breast cancer and BSE. This observation was also reported in other studies in Turkey and Saudi Arabia among this age group [13, 14] and in studies carried out among older women in Saudi Arabia and Hong Kong [11, 16]. The role of teachers in disseminating information among secondary school students cannot be overemphasized but this study revealed the poor input of teachers as a major source of information. Educating teachers about breast cancer empowers them to accurately give out information to their students as early as possible.

The high awareness of breast cancer did not translate to in-depth knowledge of breast cancer and its associated risk factors by the respondents as majority of them had little knowledge about breast cancer risk factors. Although this finding was consistent with several studies in Nigeria, Turkey, Saudi Arabia and Egypt [5, 8, 10, 13, 14], it goes to show that awareness alone does not translate to knowledge if further steps are not taken to ensure it. There was no statistically significant association between the socio-demographic characteristics of the respondents and their knowledge of breast cancer. A worrisome observation is the fact that a higher proportion of respondents whose parents had tertiary education showed poor knowledge of breast cancer. The reason for this may either be due to poor knowledge on the part of

Tab. IV. Socio-demographic characteristics/knowledge of BSE by respondents and their practice of BSE.

Variable	Practice of breast self examination Frequency (%)		χ^2	p value
	Yes	No		
Age in years				
13-15	7 (10.4)	60 (89.6)	2.977	0.226
16-18	22 (11.2)	174 (88.8)		
19-22	0 (0.0)	24 (100.0)		
Class				
SS2	10 (6.8)	137 (93.2)	3.617	0.057
SS3	19 (13.6)	121 (86.4)		
Mothers' education				
None	2 (11.8)	15 (88.2)	2.169	0.538
Primary	1 (4.5)	10 (95.5)		
Secondary	8 (7.8)	94 (92.2)		
Tertiary	18 (12.3)	128 (87.7)		
Fathers' education				
None	1 (12.5)	7 (87.5)	3.170	0.366
Primary	1 (7.7)	12 (92.3)		
Secondary	3 (4.5)	63 (95.5)		
Tertiary	24 (12.0)	176 (88.0)		
Knowledge of BSE				
Good	22 (31.4)	48 (68.6)	46.345	0.001*
Poor	7 (3.2)	210 (96.8)		

* Statistically significant.

the parents of lack of communication between them and their children especially in issues related to reproductive organs.

The practice of BSE was generally poor among the respondents in this study and the major reason for this was because they do not know how to perform it. Poor practice of BSE has been documented across all age group in various studies in Nigeria and other parts of the world [5,7,13,17,18]. However, it is commendable to note that most of them were willing to practice BSE if taught. This makes a case for intervention programmes to be directed at this age group as they will be welcomed. This is also a pointer to health education instructors not to limit information about BSE only to older women who they feel are more susceptible. Imbibing early behavioral patterns concerning BSE and having adequate in-depth information and demonstrations for these adolescents is imperative to ensure correct and effective BSE practice now and in future. The other reason given by respondents for their lack of BSE practice was that they did not expect to develop breast cancer. This perception may be due to a lack of a sense of vulnerability to the disease among the respondents as demonstrated by their poor knowledge of breast cancer and its associated risk factors. There was a significant association between knowledge of BSE and practice. The respondents who had a good knowledge of BSE practiced it more than those who did not. This was similar to other studies in Nigeria and Iran among older women [5, 18]. Adequate knowledge of breast cancer and BSE is essential to kick start interest in taking more concrete steps towards health changing behavior among this group of individuals. The younger the age, at which females

are exposed to information and knowledge of BSE, the higher the chances of adherence to BSE practice in the future. Adequate breast cancer awareness and screening practices can prevent late presentation of breast cancer and poor practice of BSE in a developing country like Nigeria.

In conclusion, the results of this study revealed the poor knowledge of breast cancer and its associated risk factors, and poor practice of BSE among senior female secondary school students in Abuja, Nigeria. Adequate, periodic intervention programmes targeting young girls should be built into school curricula regarding breast cancer and BSE practice starting from their senior year in school. This could comprise of talks and demonstra-

tions carried out by interest groups. Education of parents about breast cancer and BSE can be done by organizing talks and demonstrations through the Parent Teachers Association (PTA). Relevant nongovernmental organizations (NGOs) can make significant contribution to breast cancer and BSE education by sponsoring health talks and workshops for teachers to reposition them better to reach out to their students. Information, Education and Communication materials (IEC) can be made use of in the school environment. Health professionals should be encouraged to enlighten and disseminate accurate information regarding breast cancer, its associated risk factors and how to perform BSE to teenage girls whenever possible.

References

- [1] World Health Organisation (WHO). *Breast cancer: prevention and control*. <http://www.who.int/cancer/detection/breastcancer/en/print.html> (last access: 28/09/10).
- [2] World Health Organisation (WHO). *Screening and early detection of cancer*. <http://www.who.int/cancer/detection/en/> (last access: 27/09/10).
- [3] Parkin DM, Bray F, Ferlay J, et al. *Global cancer statistics, 2002*. *CA Cancer J Clin* 2005;55:74-108.
- [4] Adebamowo CA, Ajayi OO. *Breast cancer in Nigeria*. *West Afr J Med* 2000;19:179-91.
- [5] Okobia MN, Bunker CH, Okonofua FE, et al. *Knowledge, attitude and practice of Nigerian women towards breast cancer: a cross sectional study*. *World J Surg Oncol* 2006;4:11-6.
- [6] Banjo AAF. *Overview of breast cancer and cervical cancers in Nigeria: are there regional variations?* Paper presented at the international workshop on new trends in management of breast and cervical cancers, Lagos, Nigeria 2004.
- [7] Oluwatosin OA, Oladepo O. *Knowledge of breast cancer and its early detection measures among rural women in Akinyele local government area, Ibadan, Nigeria*. *BMC Cancer* 2006;6:271-7.
- [8] Odusanya OO. *Breast cancer: knowledge, attitudes and practices of female school teachers in Lagos, Nigeria*. *Breast J* 2001;7:171-5.
- [9] Aderounmu AO, Egbewale BE, Ojofeitimi EO, et al. *Knowledge, attitudes and practices of the educated and non educated women to cancer of the breast in semi- urban and rural areas of Southwest Nigeria*. *Niger Postgrad Med J* 2006;13:182-8.
- [10] Seif N, Aziz. *Effect of breast self examination training program on knowledge, attitude and practice of a group of working women*. *J Egypt Nat Cancer Inst* 2000;12:105-15.
- [11] Yuk YY. *Breast cancer: knowledge and perceptions of Chinese women in Hong Kong*. *Glob J Health Sci* 2009;1:97-105.
- [12] Ibrahim NA, Odusanya OO. *Knowledge of risk factors, beliefs and practices of female healthcare professionals towards breast cancer in a tertiary institution in Lagos, Nigeria*. *BMC Cancer* 2009;9: 6.
- [13] Karayurt O, Özmen D, Çetinkaya AC. *Awareness of breast cancer risk factors and practice of breast self examination among high school students in Turkey*. *BMC Public Health* 2008;8:359-67.
- [14] Milaat WA. *Knowledge of secondary school female students on breast cancer and breast self examination in Jeddah, Saudi Arabia*. *East Mediterr Health J* 2000;6:338-44.
- [15] Okobia MN, Osime U. *Clinicopathological study of carcinoma of the breast in Benin City*. *Afr J Reprod Health* 2001;5:56-62.
- [16] Dandash KF, Al-Mohammed A. *Knowledge, attitudes and practices surrounding breast cancer and screening in female teachers of Buraidah, Saudi Arabia*. *Int J Health Sci* 2007;1:76-86.
- [17] Onwere S, Okoro O, Chigbu B, et al. *Breast self examination as a method of early detection of breast cancer: knowledge and practice among antenatal clinic attendees in South eastern Nigeria*. *Pak J Med Sci* 2009;25:122-5.
- [18] Parsa P, Kandiah M. *Breast cancer knowledge, perception and breast self examination practices among Iranian women*. *The International Medical Journal* 2005;4:17-24.

■ Received on August 28, 2011. Accepted on October 21, 2011.

■ Correspondence: Alphonsus Rukevwe Isara, Department of Community Health, College of Medical Sciences, University of Benin, Benin City, Nigeria - Tel. +23 48034057565 - E-mail: mansaray2001@yahoo.com