Breast Cancer Knowledge And Screening Practices Among Nigerian Medical Students

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Abstract

Background. Late presentation of patients at advanced stages of disease forms the hallmark of breast cancer in Nigerian women. The peak age of breast cancer presentation among Nigerian women is about 10-15years earlier than what is observed in Caucasian women, where it occurs between the ages of 35-45 years. This study assessed breast cancer knowledge and behavior in terms of screening practices among introductory clinical medical students in Delta State. Nigeria.
Materials and Method. The data consisted of selected and constructed response items on a questionnaire which was administered to all introductory clinical (medical) students 18 years and older. Participation in this study was voluntary. The instrument consisted of multiple choice questions that measured variables such as general breast cancer knowledge, risk factors, symptoms, barriers, use of breast cancer screening tests, screening practices, and demographic characteristics.
Results. A total of 18 questionnaires were distributed to introductory clinical (medical) students age 18 years and above at the Delta State University in Warri, Nigeria. The response rate was 100%. Age range of respondents was 21-26 years. The overall knowledge of breast cancer was 89.1% while knowledge of the risk factors for breast cancer development was 62.7%. Knowledge of breast cancer symptoms was 67.8%. There were no barriers to breast screening exercises. All the participants admitted performing breast self examination regularly but 22.2% did not know how often breast examination should be done. Three participants (16.7%) have never been told about breast cancer screening by a nurse or physician previously and 16 students (88.9%) have never had a clinical breast examination.

Conclusion. While the overall knowledge of breast-cancer, risk factors and performance of breast self examination were good, further studies on a wider scale in Nigeria are needed to elucidate reasons why the elite women do not present themselves for clinical breast examination and why the physicians do not practice routine clinical breast examination.

INTRODUCTION

Every woman is at some risk of developing breast cancer. There are diverse risk factors that may affect each woman's susceptibility to the disease (1). Breast cancer is the most common cancer in women accounting for 23% of all cancers. Over one million cases of breast cancer and 411,000 deaths from breast cancer occur annually representing 14% of female cancer deaths worldwide (2-5). The incidence rates are higher in industrialized and more affluent countries probably as a result of the availability of early cancer screening programs that detect early invasive cancer some of which would have progressed to the late stage of the disease (4). As a result, the mortality rate from the disease is lower in these countries.

Breast cancer mortality rates are higher in developing countries as a result of late detection and diagnosis. Several factors are attributable include genetics, cultural and social factors such as poverty, unequal access to prompt high quality treatment, lack of screening facilities, or lack of awareness and knowledge of the disease. Breast cancer ranks second in cancer incidence and is still the second principal cause of cancer mortality among women worldwide including Nigeria (4, 6,7).

In a recent oncological review of cases in Jos, Nigeria, over an 8-year period, breast cancer was reported to account for 56.6% of all cancer diagnosis between 1995-2002 (8). Among Nigerian women, the peak age of breast cancer presentation is about 10-15years earlier than what is observed in Caucasian women, where it occurs between the ages of 35-45 years. Seventy percent of Nigerian women present with advanced staged disease while the five-year survival rate is less than 10% compared with over 70% in

Western Europe and North America (7).

Odusanya found breast cancer to be the most common surgical condition women worry about in a list of eleven comparable conditions (9). According to Odusanya, breast cancer is not well understood by women and there is a need for information and enlightenment if they are to present early in hospital. Among Nigerian women, some of the factors preventing early hospital presentation and thus increasing mortalities are thought to include inadequacy of systems protecting and promoting women's health and cultural taboos regarding the female body. Lack of knowledge about breast cancer has also been identified as an important factor preventing women from participating in breast cancer screening. It additionally adds to delay in presentation and treatment. Therefore it is important to understand the factors that influence patients' screening behaviors. These delays contribute to the high rates of mortality described above. An elucidation of these factors is a prerequisite for developing strategies to modify these behaviors which will lead to improvement in the morbidity and mortality rates associated with disease in this population (10).

The purpose of this study therefore, was to (1) assess the knowledge of introductory female medical students 18 years and older in Warri, Delta State, Nigeria regarding breast cancer; (2) to increase the early awareness, among these students, that breast cancer is preventable if detected early using the various recommended screening methods: breast self-examination (BSE), clinical breast examination (CBE), and mammography so they can also educate their peers; and (3) to identify existing practices of breast cancer screening among junior female medical students.

MATERIALS AND METHODS
STUDY DESIGN

This non-experimental study assessed breast cancer knowledge and behavior in terms of screening practices among Nigerian introductory clinical female medical students residing in Warri, Delta State. The data consisted of selected and constructed response items on a questionnaire which was administered to all introductory female clinical students 18 years and older who met the inclusion criteria. Participation in this study was voluntary. The variables measured on the questionnaire included demographic characteristics of the study participants, knowledge of breast cancer, breast cancer screening behaviors, possible barriers that may be preventing the students from participating in breast cancer screening and other descriptive characteristics

such as age and ethnicity.

STUDY POPULATION

The study population was composed of Nigerian female introductory clinical students age 18years and older who were residents of Warri, Delta State in April 2010. Earlier studies done among Nigerian and African women in general have revealed that breast cancer occurs earlier in these women compared with their Caucasian counterparts (7,9).

SAMPLING PROCEDURES

A non-probability (convenience) sampling procedure was used to obtain the requisite sample size. In order to be eligible for this study, the inclusion criteria were communicated to the students in the class selected. Those who met the inclusion criteria and volunteered were allowed to complete the survey for the study.

INSTRUMENTATION

A self-administered questionnaire was developed. The instrument contained a total of 32 questions. It consisted of structured questions on breast cancer knowledge, screening practices and other descriptive characteristics. The descriptive characteristics included age, ethnicity, level of education, and occupation. The questions on breast cancer knowledge and screening practices as well as those for descriptive characteristics consisted of selected response items such as true/false, yes/no, agree/strongly agree, disagree/strongly disagree and constructed response items.

DATA COLLECTION PROCEDURES

Collection of data began after approval of the study proposal was granted by the relevant authority. The data collected for this study was quantitative in nature. On the day of the data collection, a prior announcement about the study was made to the students. This announcement included information about the inclusion criteria for the study. Interested students who volunteered were approached in person by the researcher who administered the questionnaire to them. A cover letter was attached to each questionnaire to assure the participants that the information given would be anonymous and confidential. The study data was stored in the researcher's personal computer.

DATA ANALYSIS PROCEDURES

Descriptive statistics was used to examine the characteristics of the population, correct responses to questions on breast cancer knowledge, screening methods and description of the students' screening practices. Possible relationships between

breast cancer knowledge and screening practices and between breast cancer knowledge and participants' level of education were examined using analytical statistics. The data was analyzed using the Statistical Package for Social Sciences (SPSS) version 14.0 software for windows.

RESULTS

Two variables were assessed including age and ethnicity of the sample population. The demographic characteristics of the population are represented in Table 1. The students' age ranged from 21 to 26 years (Mean 23.5 ± 1.71). The majority were between the ages of 23-24 years (9, 50.0%). Participants from other ethnic groups such as Okpe, Ijaw, Ibo and Edo who were also classmates and so resided in Warri, accounted for 22.0% of the sample population while the remaining 78.0% came from the three main ethnic groups in Delta State. They are the Urhobos, Isokos, and Itsekiris accounting for 44.0%, 22.0% and 11.0% of the sample population respectively. All the respondents (18, 100.0%) were 300 level introductory clinical students at the Delta State University, Warri. Nigeria.

Figure 1

Table 1: Descriptive Characteristics of 18 Nigerian Medical Students.

Variable		Frequency	Percentage
Age (years):	21	2	11.0
	22	3	17.0
	23	4	22.0
	24	5	28.0
	25	3	17.0
	26	1	6.0
Ethnicity:	Urhobo	8	44.0
	Itsekiri	2	11.0
	Isoko	4	22.0
	Others	4	22.0

BREAST CANCER KNOWLEDGE

The participants were asked ten (10) questions to test their general knowledge of breast cancer and its epidemiology. The average percentage of correct responses was 89.1%. Table 2 shows the percentage of correct responses to the general breast cancer knowledge questions.

Figure 2

Table 2: General Breast Cancer Knowledge Among Nigerian Medical Students (N= 18)

General knowledge Questions of Breast Cancer	% Correct Responses
Most common cancer among women (True)	100.0
Disease of white women only (False)	100.0
A disease of women ≥ 50yrs (False)	94.4
Caused by breast feeding (False)	100.0
Caused by injury (False)	80.0
Caused by putting money b/w breast/brassier (False)	44.4
Caused by excessive massage/sucking (False)	88.9
Contracted by hand shake/eating (False)	100.0
Can be cured if detected early (True)	94.4
Cure is by surgery only (False)	88.9
Mean	89.1

Note. Due to missing data for some variables, percents are not based on the total sample.

One hundred percent of the students knew that breast cancer was the most common cancer in women and 100.0% also knew it was not a disease of white women only. Few of the participants (44.4%) knew breast cancer was not caused by putting money between the brassier and breast. All the participants (100.0%) knew that the disease was not caused by breast feeding. Twelve students (80.0%) knew it was not caused by an injury to the breast. All the students (100.0%) knew the disease could not be contracted by eating or shaking hands with someone having the disease. Majority (88.9%) acknowledged that surgery was not the only cure for the disease.

The students' knowledge of risk factors for developing breast cancer is reflected in Table 3. The knowledge of breast cancer risk factors was good with a mean percentage of correct responses of 62.7%.

Figure 3

Table 3: Knowledge of Risk Factors and Correct Responses (N= 18)

Statements about risk factors for Breast Cancer	% Correct Responses
Obesity (True)	55.6
Smoking (False)	0
Late menopause (True)	55.6
Early menarche (True)	61.1
Having many children (False)	77.8
Having my first child before 30 years (False)	88.9
Family predisposition increases my risk (True)	100
Mean	62.7

Note. Due to missing data for some variables, percents are not based on the total sample.

Of the 18 (100.0%) participants, 44.4% were not aware that obesity and high fat diet increase their risk of getting the disease. Similarly, 38.9% and 44.4% respectively of the participants were not aware that early menarche and late menopause would increase their risk. None of them knew that cigarette smoking does not increase their risk of getting the disease. Up to 22.2% and 11.1% of the participants were not aware that having many children and having the first child before the age of 30 years respectively lower the risk of getting the disease. All the participants (100.0%) agreed that a positive family history increases their risk of getting

the disease.

The knowledge of breast cancer symptoms was fair (Mean correct responses = 67.8%). Only five students (27.8%) acknowledged that headache was not a symptom of breast cancer and five students (27.8%) indicated that abdominal pain was not a symptom. Seventeen students (94.4%) acknowledged that bloody nipple discharge is a symptom of breast cancer. Two students (11.1%) did not know that inverted nipples is a symptom of breast cancer. All the participants (100%) were correct in recognizing ulceration over the breast as a symptom of breast cancer. Figure 1 is a graphic representation of the students' knowledge of breast cancer symptoms.

Figure 4

Figure 1. Knowledge of Breast Cancer Symptoms and Percentages of Correct Responses among 18 Nigerian Medical Students.
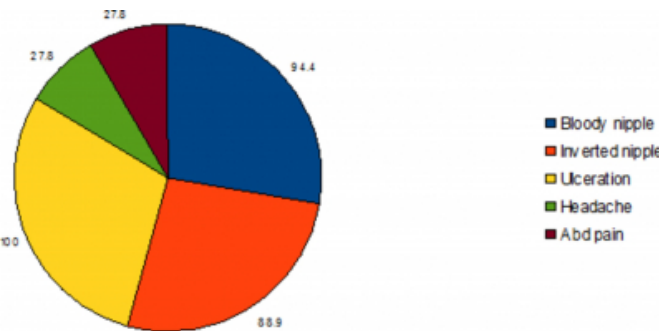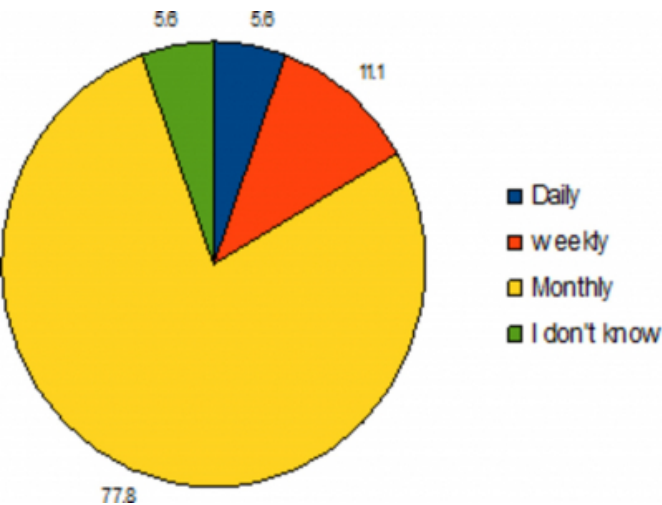

KNOWLEDGE OF BREAST CANCER DETECTION AND SCREENING PRACTICES

The students were asked questions about the methods of breast cancer detection (screening) and their screening practices. All the students (100.0%) recognized breast self-examination to be an examination they could perform themselves without requiring the assistance of a physician. However, four students (22.2%) did not know how often breast self-examination should be done. Figure 2 displays the percentage responses of the students regarding how often breast self-examination should be done or performed.

Figure 5

Figure 2. Percentage Responses to the Question: How often should Breast Self-Examination be Done?

All the 18 study participants identified clinical breast examination, breast self-examination and mammography as methods for breast cancer detection or screening. All the participants (100.0%) practice breast self-examination but only nine of them (50.0%) knew how to correctly do a breast self examination and only two students (11.1%) reported having undergone clinical breast examination. Three students (16.7%) did not know that ultrasound was a screening technique for early detection of breast cancer. Figure 3 shows the participants' knowledge of the screening methods and screening practices.

Figure 6

Figure 3. Knowledge of the Screening Methods and Screening Practices among 18 Nigerian Medical Students.
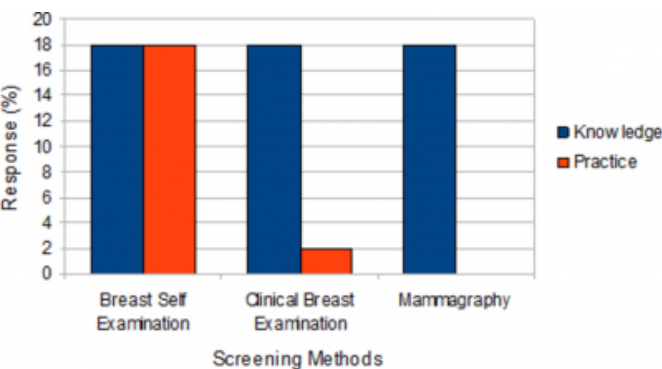
A greater percentage (88.9%) knew that breast self-examination could be performed by standing in front of a mirror, 94.4% thought that breast self-examination could be done lying down and resting one's hand on a pillow and 55.6% knew that it involved the use of finger pad.

Nine participants (50.0%) affirmed that they did not know

how to perform a breast self -examination (BSE) correctly and 16 (88.9%) indicated they had no confidence in performing BSE. Ten students (55.6%) were not afraid of detecting a breast lump during BSE. All of them (100%) felt performance of BSE was not time consuming.

Three participants (16.7%) have never been told about breast cancer screening by a nurse or physician and 16 students (88.9%) have never had their breasts examined by a nurse or doctor during any of their hospital visits. One of the students (5.6%) did not know that a mammogram was an x-ray of the breast. Four of the students (22.2%) did not know how often mammography should be done.

All 18 (100.0%) participants agreed that participating in breast cancer screening was not time consuming. Only seven students (38.9%) were not afraid of participating in screening exercises and only seven students (38.9%) were aware that screening should not be limited to women who were 35years and older. All the students knew there was benefit to be derived from participating in screening.

DISCUSSION

Although the participants' general knowledge of breast cancer and its etiology was fair, the majority (55.6%) still thought that breast cancer was caused by putting money between the breast and the brassiere. The knowledge of breast cancer risk factors among the students was also fair. The mean percentage of correct responses was 62.7%. None of the participants could recognize all the listed risk factors correctly. This knowledge level is poor and is comparable to a similar study in Nigeria among school teachers where only 27% of the participants were able to identify three risk factors correctly (9). Many of participants recognized the correlation between a positive family history and the risk of developing the disease. There are indications that women with a family history of breast cancer, especially a first-degree relative, have about 30% increased risk of developing the disease and the risk increases if more than one first-degree relative has the disease (11). Adequate knowledge of the significance of this risk enhanced the students' early self breast examination.

Forty-four percent of the respondents were unable to identify high fat diet and obesity as risk factors for breast cancer. Adebamowo et al. have found a positive association between waist-hip ratio and breast cancer risk in urbanized Nigerian women (12). Though a typical diet in Africa consists of

grains, vegetables and fibers which are protective, western

influence on diet could result in high consumption of a high fat diet thereby increasing the risk of developing the disease (13).

Participants' knowledge of breast cancer symptoms was better than their knowledge of the risk factors although the mean percentage of correct responses of 67.8% and 62.7% respectively were fair. More than half of the participants could correctly identify three of the five breast cancer symptoms asked. This finding is similar to a study in the United Kingdom where the participants were able to correctly identify four symptoms out of the five statements describing symptoms of breast cancer (14).

Good knowledge of the disease risk factors and symptoms contradict the findings of some previous studies done in Nigeria among different populations (7, 9). This in part contributes to early hospital presentation and better prognosis associated with early diagnosis of breast cancer.

The students' breast self examination practices were encouraging. This might be due to the result that up to 83.3% of them had been told about breast examination by a nurse or a physician.

More than eighty percent of the participants reported that they have never had a clinical breast examination. In the United States, clinical breast examination is routinely included as part of a regular health examination. This provides the opportunity for a woman and her healthcare provider to discuss changes in her breast tissue (11). In Nigeria however, breast examination is not routinely done by physicians. O'Malley et. al., (2001) has reported that physician endorsement of screening practices is more likely to encourage and promote breast self-examination (BSE) in women and women who received a clinical breast exam by their healthcare provider were more likely to remember to perform BSE (15).

Although all the participants in this study were below the recommended age for mammography screening, which is forty years and above, it would be advisable that screening begins earlier. Studies have indicated an earlier incidence of the disease among African women compared to their western counterparts (7,13,16). In countries such as the United States and the United Kingdom, where these screening methods are widely available and are properly utilized, the mortality rate associated with the disease has been reduced significantly (11, 17).

This study examined the rate of breast self-examination

among the participants. The results indicate that all the the study participants (100.0%) practice breast self-examination. This finding is different from that of Jacob, Penn and Brown who found that 89% of the respondents in a survey among black women in the United States practice breast self-examination (18).

The difference in the behavior of these Nigerian students residing in Warri could probably be a result of increasing awareness creation in the society and the field of study even though as at the time of this study, the respondents had not been fully introduced into clinical studies. Though 100% of the respondents perform BSE, some (11.1%) acknowledged lack of knowledge and self-efficacy on how to correctly perform breast self-examination. This buttresses the findings of a previous study which showed that performance of breast self-examination (BSE) is related to the woman's perception of her skills in performing it and that confidence in breast self-examination skills is a significant predictor of BSE compliance (19).

Studies among Russian immigrant women, women in Israel and the United Arab Emirates indicate religion, culture, husband's attitude and fear as some of the barriers to performance of breast self-examination (20). These findings were not corroborated in this study. None of the participants saw these factors as barriers to performing a breast self-examination. They also do not perceive breast self-examination to be time consuming.

An important barrier to participating in breast cancer screening is lack of clinical breast examination performed by clinicians. In this study, only three students (16.7%) acknowledged that their physicians and nurses had never discussed breast cancer screening with them and yet over 80% have never had a clinical breast examination. This is in sharp contrast to what is obtained in the United States, where 92% of the women participating in a similar study reported having a clinical breast examination performed by their physicians (21).

CONCLUSION

The findings of this study indicate the need for more research in areas related to breast cancer knowledge and screening practices among educated Nigerian women. The fact that these highly educated students were quite knowledgeable about the risk factors and symptoms of breast-cancer development, perform breast self examinations and yet do not present themselves for clinical breast examinations calls for further studies to elucidate reasons

why.

Future research efforts should also address the reasons why physicians and nurses do not counsel female patients to perform breast self-examination. Such research should also look into factors contributing to low rates of clinical breast examination by physicians during routine office visits.

There is a need to identify culturally appropriate methods to teach women how to perform breast self-examination and enhance their self efficacy in using this method. Interventions to promote culturally sensitive public health programs designed to provide information and services that cut across different age groups, educational levels and cultures should be developed and implemented.

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