Breast Cancer: Knowledge, Attitudes, and Practices of Female Schoolteachers in Lagos, Nigeria

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■ **Abstract:** This article examines the knowledge, attitudes, and practices of female schoolteachers concerning breast cancer. A cross-sectional survey was conducted among 200 schoolteachers randomly selected from 12 schools in Lagos, Nigeria. A self-administered questionnaire was used to investigate their knowledge about the symptoms of breast cancer, methods of diagnosis, risk factors, and breast self-examination. A response rate of 94% (188 respondents) was achieved. Eighty-five percent knew breast cancer was a serious disease, but only 53.2% knew that a breast lump was the most commonly recognized sign. Other symptoms were even less well known. Only 13.8% knew the methods of diagnosis, and knowledge of risk factors was also poor. Breast self-examination was practiced by 62% of respondents; 11% practiced it on a monthly basis, but only 25% were deemed to possess sufficient knowledge about the procedure. One-quarter of participants were categorized as possessing a satisfactory knowledge of breast cancer. The level of awareness on breast cancer is very low among this group of female schoolteachers. ■

Key Words: attitudes, breast cancer, knowledge, practices, schoolteachers

Breast cancer is now the most common cancer in women and the second leading cause of death (1). In Nigeria, the incidence of breast cancer has been reported to be 33.6/100,000 (2), while in a review of 746 breast biopsies, 278 cases (37.3%) were malignant lesions (3). The breast cancers in the study constituted 12.7% of all malignant tumors and 21.2% of all female cancers. The incidence of cancer in the study peaked in women 35–45 years of age (mean age 43 years).

Breast cancer has been found to occur at a younger age in Africa than in the developed world, with more than half of cases occurring in premenopausal women (4). A bimodal pattern of age presentation has been observed in Zimbabwe, with an early peak at 35–40 years and a later peak at 60–65 years (5).

Among women, breast cancer is the condition they are most concerned about out of a list of 11 comparable conditions. Fifty-six percent cited breast cancer as the condition they feared most (6), but many of them were confused and did not adequately understand about the risk factors associated with breast cancer (6,7). Such risk factors include early menarche, late menopause, late conception of their first child, and hormone replacement after menopause (8). Others are exposure to organochlorine compounds (9) and alcohol (10).

A study on cancer awareness in Nigeria showed that only 32% (148/460) knew that a breast lump was a warning sign of cancer, 58.5% were not aware of the warning signs, 9.8% knew of methods for detecting cancer, and 50% did not know that cancer was curable when detected early (11). This low level of knowledge of warning signs and detection may be responsible for late presentation. In one study, 64% of patients had symptoms of breast cancer for more than 6 months before presentation and 77% presented with late stages of the

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disease. The peak age of incidence was 31–40 years, most were parous (95%) and premenopausal (62%) (12). With such late presentation, prognosis is usually poor, with a median survival of 1.5 years reported in one study (13). It is clear that breast cancer is not well understood (6,7,11), and there is need for information and enlightenment if patients are to present early.

This study was conducted among female schoolteachers to determine their knowledge of risk factors, warning signs, and methods of detecting breast cancer. In Nigeria, the minimum educational qualification for teaching is the National Certificate of Education (NCE), which is obtainable after 3 years of postsecondary school. Such graduates are expected to have had at least 15 years of formal education and can be said to have an average level of education. Teachers have been shown to be good agents of information transfer (14) and they are in contact with a large segment of the population.

METHODS

Study Design

The study was conducted as a cross-sectional survey among female schoolteachers. The survey was designed to investigate the sociodemographic background of the respondents and their level of awareness and knowledge of breast cancer.

Instrument

A self-administered questionnaire consisting mainly of close-ended questions was used as the survey instrument. The instrument was developed by the author and pretested on a group of schoolteachers who were not part of the study group. It had not been used previously. The questionnaire sought information on the sociodemographic characteristics of the teachers, such as age, educational qualifications, and length of time teaching. The respondents were asked about the symptoms of breast cancer, risk factors relating to breast cancer, methods of diagnosis, methods of treatment, and the practice of breast self-examination.

Sampling

The minimum sample size for the study was determined from a computer-based statistical software, Epiinfo version 6.04b. The sample size was determined by making the following assumptions: the proportion of teachers who have a satisfactory knowledge of breast cancer was estimated at 50%, a precision of ±7.5% and a confidence interval of 95%. Thus the required sample size was 170.

The participating schools were drawn from four local government areas (LGAs) of Lagos State, randomly selected from the 20 LGAs in the state. In each LGA, the list of schools was obtained and three schools were randomly chosen per LGA. The number of female teachers in all the identified schools was obtained and probability proportional to size was used to determine the number of teachers recruited from each school. Teachers recruited into the study were selected through random sampling. Individual consent of the participating teachers was obtained.

Analysis

Each completed questionnaire was graded and scored on factors such as knowledge of the symptoms of breast cancer, methods of diagnosis, breast self-examination, and knowledge of risk factors. A maximum of 32 points could be obtained on the knowledge, attitude, and practice (KAP) score.

The points consisted of knowledge (24), attitude (6), and practice (2). The knowledge score included symptoms (5), methods of diagnosis (5), breast self-examination (5), risk factors (5), and treatment (4).

Performance was graded as good (75%), fair (50–74%), or poor (<50%). Statistical analysis was performed on Epiinfo version 6.04b software. Both descriptive and inferential statistics were produced. The level of significance was set at $p < 0.05$

RESULTS

One hundred and eighty-eight teachers returned their questionnaire, giving a response rate of 94%. The mean age was 34.4 ± 6.5 years, four of five were married, the mean number of children was 2.3, and they had worked an average of 9.4 ± 5.9 years. Ninety women (47.9%) worked in primary schools and the remainder (98) worked in secondary schools. Eighty-nine women (47.8%) had an NCE certificate, 12 (14.5%) did not possess the certificate, and the remainder (70; 36.4%) had a first or higher university degree.

Table 1 shows the respondents knowledge of breast cancer symptoms. Table 2 shows their knowledge of the

Table 1. Knowledge of Symptoms of Breast Cancer

Symptom	*N*	Percent
Breast lump	100	53.2
Ulceration over breast	45	23.9
Bloody nipple discharge	41	21.8
Swollen axillary glands	31	16.5
Weight loss	21	11.2

Table 2. Knowledge of Methods of Diagnoses of Breast Cancer

Method of Diagnosis	*N*	Percent
Consultation with a specialist	129	68.6
Breast self-examination	84	44.2
Pathologic examination of breast tissue	25	13.3
Ultrasound	19	10.1
Mammography	15	8.0

methods used for diagnosing breast cancer. As many as 76 respondents (40%) did not know how frequently breast self-examination should be done, though daily examination was the most frequently suggested. Nevertheless, 116 (61.7%) claimed to perform regular breast self-examination. The proportion of women who knew the steps in conducting a breast self-examination was generally low, with only 48 (25.5%) possessing sufficient knowledge (Table 3). Knowledge of risk factors associated with breast cancer was generally poor (Table 4).

Attitudes toward breast cancer are shown on Table 5. The majority regarded breast cancer as a serious illness, and about half of respondents knew the disease was curable. Four of five respondents would visit a doctor within a month of detecting a breast lump. About half of the respondents said they would agree to have a mastectomy if they had breast cancer.

Respondents' KAP scores are shown in Table 6. Forty-seven participants (25%; 95% confidence interval 19–31%) obtained a satisfactory grade of 50% or more. It was observed that teachers in secondary schools (32/98; 32.7%) performed significantly better than those in primary schools (15/90; 16.7%) ($\chi^2 = 5.57$, df = 3, $p = 0.02$). This is probably related to educational qualifications, as there were significantly more teachers with higher qualifications in the secondary schools (44/99; 44.9%) than in primary schools (22/90; 24.4%) ($\chi^2 = 8.37$, $p = 0.004$). Age ($\chi^2 = 21.05$, df = 30, $p = 0.89$) and length of time teaching ($\chi^2 = 27.94$, df = 24, $p = 0.20$) did not show any significant relationship with performance.

Table 3. Knowledge and Conduct of Breast Self-Examination

Variable	*N*	Percent
How often should breast self-examination be performed?		
Daily	39	20.7
Weekly	14	7.4
Monthly	22	11.7
Undefined	37	19.7
Don't know	76	40.4
Frequency of breast self-examination		
Daily	37	19.7
Weekly	19	10.1
Monthly	20	10.6
Undefined	40	21.3
None	72	38.3
Procedure for breast self-examination		
Using finger pads	51	27.1
Monthly interval	73	38.8
Examination of axilla	44	23.4
Standing before a mirror	77	41.6
Resting head on a pillow during examination	55	29.3

Table 4. Knowledge of Risk Factors for Breast Cancer

Risk factor	Respondents with correct answers ($n = 188$)	Percent
Positive family history of breast cancer	58	30.9
Smoking is associated with increased risk	57	30.3
Working class women are at greater risk of cancer	61	32.4
Bruising the breast is contributory to breast cancer	52	27.7
Multiparity confers lower risk	19	10.1

DISCUSSION

The objective of this study was to determine the knowledge, attitudes, and practices of female schoolteachers concerning breast cancer. No attempt was made to estimate the risk of cancer or the use of cancer prevention strategies in the study population. Knowledge on all aspects of breast cancer, such as symptoms, methods of diagnosis, and breast self-examination, in the study population was low. This low level of knowledge is comparable to other studies from Nigeria (11) and among Asian women (15,16). However, more women in this study (53%) recognized breast lump as a sign of breast cancer

Table 5. Attitudes Toward Breast Cancer and Place of Treatment

Variable	*N*	Percent
Breast cancer is a serious disease	160	85.1
Breast cancer is curable	94	51.4
Attitudes if respondent develops breast cancer		
Be scared	94	50.0
See a doctor	158	84.0
Go to a prayer house	118	62.8
Use traditional medicine	28	12.2
Agree to a mastectomy	93	49.5
Time period to see a doctor if you discover a breast lump		
Within 1 month	155	82.5
1–3 months	6	3.2
More than 3 months	2	1.1
Not at all	19	10.1

Table 6. Knowledge, Attitude, and Practice Scores

Variable	*N*	Percent
Mean score (SD)	12.2 (5.1)	
KAP scores		
<50%	141	75.0
50–74%	45	23.9
>75%	2	1.1

than the 32% reported in one study (11), and the proportion of women who recognized the disease as serious in our study (85%) was higher than the 29% who did so in another study (16). Though many of the respondents knew breast cancer is a serious problem, they were not sure of the warning signs and had little understanding about the risk factors of the disease. Their level of understanding was lower than has been reported for women in the United Kingdom (6).

Though as many as 62% of women in this study reported conducting breast self-examination regularly, only 25% possessed sufficient knowledge on how it should be done, and only 11% practiced it at the correct interval (monthly). The proportion of women in this study performing monthly breast self-examination was much lower than the 52% reported in one study (17) or the 76% reported in a second study (18), but was comparable to the 12% obtained in a study of women with a low level of education (15). In this latter study (15), no relationship was found between age, education, and breast health practice scores. However, another study documents the reverse, where these factors were found to influence knowledge about breast cancer (16), which in part agrees with our findings. Thus it appears that the true relationship of these factors depends more on the characteristics of the population being studied.

Furthermore, the participants were not aware of the importance of diagnostic tools such as mammography and ultrasound, which aid in early diagnosis and prevent the serious morbidity and mortality associated with late presentations. However, a recent review raises doubts about their usefulness, as breast cancer occurs about a decade earlier in African women (40 years), a period when the benefit of mammography is uncertain (19).

Attitudes toward breast cancer were positive, as many of the schoolteachers said they would see a doctor within a month of discovering a breast lump. This time interval has been shown to be favorable for prognosis, as delays of 3–6 months after onset of symptoms are associated with lower survival (20). However, only about half of the respondents said they would agree to a mastectomy. This is probably related to African cultural beliefs, which discourage removal of body parts and make such procedures unacceptable (12). About half of the respondents said they would also turn to prayer houses for help if they had breast cancer, although this was not exclusive of hospital care. It should also be noted that one-tenth of our respondents would turn to traditional medicine in search of help. This is one cause of delay in presentation (12,19) and is deeply rooted in African traditional beliefs, where supernatural forces are believed to be important causes of disease.

This study demonstrates that knowledge of breast cancer in a group of Nigerian women with at least an average level of education is very poor, as only 25% possessed adequate knowledge on the subject. The proportion of schoolteachers with adequate knowledge falls below the hypothesized figure of 50%. This low level of knowledge may be contributory in part to the late presentation and poor prognosis frequently seen in Nigeria (2,12,13). It can thus be argued that if this study population did not have sufficient information on the subject, then the larger populace, with a lower literacy rate, is very likely to be ignorant.

A suggestion for improving this poor level of knowledge is to provide health education to all women. We advocate that schoolteachers be considered as a special group that should receive information on breast cancer. This information sharing should be seen as an investment in the teachers, as this will enable them become agents for promoting breast cancer awareness in the larger society, with whom they are in contact in the course of teaching children. It should be noted that children less than 15 years of age are 50% of the Nigerian population and a large percentage of them are in school. Doctors should take every opportunity to educate women about breast cancer. Health workers are encouraged to collaborate with other groups, including prayer houses, on the need for early referral, as many people are likely to visit them when they develop symptoms suggestive of breast cancer.

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