

## BREAST CANCER AWARENESS AMONG NURSES IN KUMASI GHANA: KNOWLEDGE, ATTITUDES AND PRACTICE

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### Abstract

**Background:** There is no published data on breast cancer awareness among the Ghanaian population in the country.

**Objectives:** To determine the level of breast cancer awareness of among nurses at the Komfo Anokye Teaching Hospital (KATH) Kumasi.

**Method:** A standard self-administered questionnaire was distributed among the qualified nurses (degree, diploma, and certificate-SRN holders) in the departments of Surgery, Medicine, Obstetrics and Gynaecology and Paediatrics at KATH. The questionnaire sought to investigate the level of knowledge on several aspects of breast cancer among the nurses; these include the symptoms, methods of diagnosis, risk factors, and methods of screening for the disease— breast self-examination, clinical breast examination and mammography. The completed questionnaire were retrieved, graded and scored.

**Results:** The response rate was 53.9% (165/306). Mean knowledge score was 68.9%. Ninety

respondents (54.5%) knew about one or two out of five risk factors. One hundred and fifty-nine participants (94.5%) thought that breast cancer was a serious disease. One hundred and thirty-five respondents (81.8%) indicated that they would see a doctor on the same day that they develop breast cancer and 102(61.8%) would accept mastectomy as treatment of the disease. Breast self-examination was practiced by 119 or 72.0% of the respondents. Respondents who were highly knowledgeable of breast cancer practiced clinical breast examination more frequently (27/93); (8/72) ( $X^2 = 9.4, p=0.001$ ). The practice of all three screening methods was less frequent (>5%) among all the participants.

**Conclusion:** In general terms the nurses at KATH have adequate knowledge about several aspects of breast cancer. Knowledge of risk factors, the practice of clinical breast examination and the use of mammography is low.

**Key Words:** Breast Cancer; Knowledge; Attitude; Screening Practices; Kumasi.

### Introduction

Worldwide breast cancer emerged as the condition that women were most concerned with out of a number of 11 comparable health problems, and 56 % indicated that breast cancer was one disease they feared most<sup>1</sup>. In many developing countries, the incidence of the disease appears to be rising especially among populations that previously recorded lower rates, with an associated increase in the mortality and morbidity<sup>2-3</sup>. In Ghana breast cancer is now the most common malignant disease in women and accounts for the majority of cancer related deaths<sup>4</sup>.

For many women with symptomatic cancer, prolong delay - defined arbitrarily as an interval of more than three months between first detection and time of diagnosis and treatment- has been associated

with a more advanced stage of the disease at presentation with resulting poor outcome<sup>5-6</sup>. In a recent report from Accra Ghana the average duration of symptoms before presentation was 10 months. As a result almost two-thirds (57.6%) of the patients who were diagnosed with breast cancer presented with Stage III-IV disease<sup>7</sup> and in a report on the reasons for delay in reporting nearly a third (28.8%) of the respondents indicated that ignorance of the early signs of breast cancer accounted for the late presentation<sup>8</sup>. Data from other sources suggest that factors related to women's knowledge and beliefs about breast cancer and its treatment may determine their medical help-seeking behaviour<sup>9-10</sup>.

Previous studies on the clinical presentation of breast diseases and breast cancer indicated that in many cases a painless breast lump was often ignored for several months before presentation to hospital<sup>11</sup>. There is a need for information and education if breast cancer patients are to present early to hospital thereby improving the outcome of treatment.

Nurses have the potential to disseminate accurate information and knowledge on breast cancer to the general public. This is because as frontline healthcare providers, nurses are more often in contact with patients and their relatives than doctors and

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pharmacists. In Ghana the role of nurses as health educators on breast cancer is not fully established. In some advanced countries nurses play additional roles as advocates for early presentation to hospital<sup>12</sup>. If nurses are expected to educate the public then it is important to assess the level of knowledge that they have on breast cancer. The purpose of this study is to determine the level of knowledge among nurses at the Komfo Anokye Teaching Hospital (KATH) of risk factors, signs, methods of diagnosis as well as awareness and use of breast cancer screening methods.

## Method

The design of the study was to provide a cross-sectional survey among the qualified or professional nurses at KATH. In Ghana a qualified or professional nurse is a health provider who after a secondary education received a minimum of three years of professional training for the award of a certificate, a diploma or a degree in nursing. The study participants were ward nurses drawn from four major clinical departments – surgery, medicine, child health and obstetrics and gynaecology. An informed consent was sought and obtained from each participant who also signed the consent form on the questionnaire. Concerns about the confidentiality of responses were carefully addressed to the satisfaction of each participant.

The instrument for the survey was a self-administered questionnaire. The questionnaire contained fixed-answer questions with several alternatives some of which were correct others not. The respondents had to distinguish between these alternatives by deciding if each alternative was correct or incorrect using a gradient of responses such as „yes“, „no“, or I don't know/not sure when they could not decide. The questionnaire was pre-tested for validity and clarity of the questions in a pilot study on the nurses at the out-patient departments and the operating theatres of the hospital.

The questionnaire sought information from the respondents on the following; the social and demographic background, educational attainments, professional qualifications, work experience, posting to work on surgical wards, involvements in the care of breast cancer patients and any previous attendance at workshops or seminars on breast cancer. In addition participants were asked about the possible causes of breast cancer, the clinical presentation or symptoms, methods of diagnosis, the available forms of treatment, the risk factors as well as methods for screening for disease. Furthermore information was elicited on the attitudes of the respondents to breast cancer and breast self-examination, clinical breast examination and mammography for screening for the disease.

The study population was the qualified female nurses at KATH totalling 306. Qualified female nurses on study, annual, and maternity leave as well as those in the process of being transferred were excluded from the study because of the difficulties of retrieving the

completed questionnaires. Three hundred and six qualified nurses on the wards received the questionnaire.

## Analysis

Each completed questionnaire was scored on knowledge, attitude and practice. A maximum of 43 points could be obtained from the knowledge, attitude and practice (KAP) score made up as follows: knowledge 28, attitude 5 and practice 10 points. The over-all performance of each participant was graded as good (75%), satisfactory (50-74%) and poor (less than 50%).

Statistical analysis was performed with the SPSS version 16.0 software. Frequency distributions of variables were produced. The t-test was calculated for numerical variables where there were two groups and analysis of variance (F statistic) for three or more groups. The chi-square test was used to compare categorical variables and proportions. The level of significance was set at  $p > 0.05$ , all p-values were two sided.

## Results

Of the 306 female nurses who participated in the study 165 returned their completed questionnaire representing a response rate of 53.9%.

### *Demographic characteristics of respondents*

Table 1 shows the sociodemographic characteristics of the respondents and indicates that the majority of our study participants were mature nurses with considerable work experience. The median age of 51 years is an indication that based on age as a risk factor most of the nurses who participated in the study were at risk of breast cancer.

### *Breast cancer awareness among respondents*

Table 2 shows the responses to the variables on the knowledge, diagnosis and screening of breast cancer. For each of the variables majority of the nurses (over 65%) gave the correct response. For example 72.1% of the nurses indicated that a painless breast lump was a symptom of breast cancer. Knowledge of breast cancer screening methods was above 65%. Majority of the nurses were well-informed about the usefulness of breast self-examination (139 or 84.2%), clinical breast examination (129 or 78.2%), and mammography (114 or 69.1%) as breast cancer screening methods (Table 2).

### *Knowledge of breast cancer risk factors and of breast self-examination*

Table 3 shows the proportion of study participants who responded correctly to variables on knowledge of breast cancer risk factors and indicates that knowledge of breast cancer risk factors is low. The proportion of the study participants who provided the correct answers to each of the five variables was less than a third,

except for positive family. Even then just about one-half of the nurses answered correctly.

**Table 1:** Demographic characteristics of respondents

Variable	n(165)
Age(years)	
Mean+-SD	44.6(12.5)
Median	51.0
Age at menarche(years)	
Mean(SD)	14.7 (1.7)
Median	15.0
Age at first birth( years)	
Mean(SD)	25.9(4.5)
Median	25.0
Parity	
Mean(SD)	2.2(1.7)
Median	2.0
Age atmenopause(years)	n=77
Mean(SD)	48.9(3.2)
Median	49.0
Working experience(years)	
Mean(SD)	21.0(12.6)
Median	26
Professional qualification	n (%)
University degree	10 (6.1)
Diploma	65(39.6)
SRN Certificate	89(54.3)
Marital Status	n(%)
Married	98(59.4)
Single	56(33.9)
Divorced/widowed	11(6.7)
Worked on surgical Ward	138(83.6%)
Cared for breast cancer patients	86(52.1%)
Ever attended workshop or seminar on breast cancer	28(17.1%)

Cancer risk estimation by the respondents was poor. Breast cancer risk estimation was done using five factors: age at menarche less than 13 years, age at first full-term pregnancy after 24 years, parity of two or less children, age at menopause after 55 years and family (mother, sister, aunt ) history of breast cancer. Over one- half (55.2%) of the participants either believed that they were not at any extra risk (52) or did not know (39) how to assess cancer risk (table 3). In Table 4, 184 participants or 50.9% were found to be at a definite risk when two factors were considered and only 35 participants or 21.2% were not at any extra risk.

Table 4 summarizes the distribution of breast cancer risk awareness among the study participants. Of the total 165 respondents who answered five questions on breast cancer risk factors, 59 (35.6%), were unaware of any of the five risk factors: a total of

**Table 2:** Proportion of 165 respondents to variables on knowledge, diagnosis and screening for breast cancer

Variable	„yes“ responses	%
<i>Causes of breast cancer</i>		
Cause not known	129	78.0
<i>Symptoms of breast cancer</i>		
Painless breast lump	119	72.1
Swelling in the armpit/axilla	125	75.8
Swelling of the whole breast	116	70.3
Bloody nipple discharge	134	81.2
A sore on the nipple	114	69.1
<i>Methods of diagnosis</i>		
Clinical breast examination	144	87.3
Self-breast examination	131	79.4
Mammography	148	89.7
Ultrasound	102	61.8
Consultation with a specialist	135	81.8
Pathologic examination of breast tissue	148	89.7
<i>Useful screening methods</i>		
Self – breast examination	139	84.2
Clinical breast examination	129	78.2
Periodic mammography	114	69.1

**Table 3:** Proportion of study participants who responded correctly to variables on knowledge of risk factors of breast cancer

Risk factors	No.	%
Menarche before 13 years	48	29.1
Menopause after 55 years	40	24.2
If you have two or less children	23	13.9
First full-term pregnancy after age 24 years	28	17.4
Mother, sister, aunt treated for breast cancer	93	56.4
Do you think that you are at risk of breast cancer?		
yes	74	44.8
no	52	31.5
I don't know	39	23.6

**Table 4:** Frequency Distribution of Knowledge of Breast Cancer Risk Factors among Respondents (n=165)

Knowledge of Risk Factors	Number	%
None	59	35.6
One factor	46	27.7
Two factors	44	26.7
Three factors	14	8.4
Four factors	5	3.0
All five factors	0	0

**Table 5:** Proportion of 165 respondents to the variables on knowledge of breast self-examination

Variable	Number	%
<i>How often should a woman examine her breasts?</i>		
Once a week	30	18.2
Once a month	110	66.7
Once in a while	20	12.2
Once every six months	5	3.1
<i>What is the correct way for a woman to examine her breasts</i>		
Using finger pads	124	75.2
Standing before a mirror	77	46.7
Includes examination of the axilla	111	67.3

90 respondents (54.5 %) knew about one or two factors only. No respondent was well informed of all five factors.

In table 5 the responses to the variables on knowledge of breast self-examination indicate that participants were well- informed as to how often a woman needs to examine her own breasts. Two- thirds of the responses were correct on monthly breast self-examinations. However a third of the responses were wrong. Most participants were well-informed about the technique of breast self-examination but less than 50% were aware that the procedure requires standing before a mirror.

*Attitude towards breast cancer*

Table 6 summarizes the attitude of the respondents to breast cancer diagnosis and treatment. Respondents have a generally positive attitude towards breast cancer. Almost all the respondents 159 (94.5%) thought that breast cancer is a serious disease (positive attitude) though less half of them 79 (47.9%) believed

that the disease could be cured (negative attitude); still majority of them 135(81.8%) will see the doctor the same day should they think that they may have breast cancer and 102 respondents or (61.8%) will accept mastectomy. Of the 165 respondents 131 (79.4%) were unsure whether a witchdoctor could or could not treat breast cancer.

**Table 6:** Proportion of 165 responses to variables on attitude towards breast cancer diagnosis and treatment

Variable	Number	%.
<i>Breast cancer is a serious disease</i>		
Yes	156	94.5
No	9	5.5
<i>Breast cancer is curable</i>		
Yes	79	47.9
No	86	52.1
<i>Will you accept mastectomy?</i>		
Yes	102	61.8
No	46	27.9
Not sure	17	10.3
<b>Best practitioner to treat breast cancer</b>		
<i>Spiritualist/spiritual intervention</i>		
Yes		
No	25	15.2
Don't know	112	67.9
	28	17.0
<i>Herbalist/traditional doctor</i>		
Yes	12	7.3
No	120	72.7
Don't know	33	20.0
<i>Orthodox medical practitioner</i>		
Yes		
No	107	64.8
Don't know	28	17.0
	33	18.2
<i>Witch doctor</i>		
Yes	1	0.6
No	33	20.0
Don't know	131	79.4
<i>Time period to see a doctor if you discover a lump in your breast</i>		
Same day	136	81.1
Within 1month	102	61.8
Within 1-3 months	37	22.4
Any time that you are free	19	11.5
<i>Will you inform your husband/partner if you develop breast cancer?</i>		
Yes	128	77.6
No	37	22.4

*The practice of breast cancer screening methods*

Although breast self-examination was practiced by almost three- quarters of the nurses in the study (119 or 72%) fewer (91or 55.2%) did so correctly (at monthly intervals) (table 7).

**Table 7:** Proportion of 165 respondents to the variables on practice of breast cancer screening methods

Screening methods practised	“Yes” responses	%
Self- breast examination in the past six months	119	72.1
Clinical breast examination in the past one year	35	21.1
Mammography in the last 4 years	18	10
All three methods	5	3.0
<i>Frequency of breast self-examination</i>		
Weekly	45	27.5
Monthly	91	55.2
Once in a while	55	33.3

**Discussion**

The purpose of this study was to determine the level of awareness of breast cancer among nurses at the KATH, the second largest in Ghana. As expected from a group of experienced (working for over 20 years) and mature nurses (mean age 44.6 years) table 1, majority of the study participants (81.2%) were well informed and possessed adequate knowledge on the symptoms, methods of diagnosis and treatment of breast cancer as well as the usefulness of all three established methods of breast cancer screening (Table 2). This finding is similar to that reported from a study of nurses at a large hospital in Lagos Nigeria a decade ago<sup>13</sup>.

Knowledge of risk factors for breast cancer was however poor among the nurses in our study. Over one - third ( 35.6%) of the study participants were unaware of any of the five risk factors and a total of 105 participants 63.6% were ignorant of all factors or correctly answered only one statement on breast cancer risk factors (Table 3). This result is almost the same as that obtained from a study of Nigerian nurses who correctly answered only two out of five statements<sup>13</sup> but differs sharply from reports on similar studies from the Western world. In a study on British women over a decade ago, four out of five statements were correctly answered by half of the respondents<sup>14</sup>.

Knowledge about the frequency of breast self-examination was above average. Two thirds (66.7%) of the participants knew the correct time during the menstrual cycle that examination was most useful. This result is higher than the 40% reported from Nigeria<sup>12</sup> but lower than the 77% from a study among university nursing students in the USA who recognized the recommended time interval<sup>15</sup>.

There were some notable gaps in the knowledge of our study participants. A third of the participants did not know how often a woman needed to examine her breasts (table 5). In addition although 124 or 75.2% of the study participants understood that self-breast palpation was best done using the finger pads less than

half (77 or 46.7%, Table 5) were aware that the correct procedure required standing before a mirror. Nevertheless in spite of the weaknesses in the knowledge on some aspects of breast cancer noted above, the nurses in this study were generally well informed on several relevant aspects of the disease as indicated by the finding that knowledge scores of majority of the nurses (81.8%) were graded as high. This performance was independent of a wide range of personal or demographic characteristics of the study participants indicating a truly professional nursing staff at KATH.

Our study participants demonstrated a generally positive or healthy attitude (77.0%) towards breast cancer diagnosis and treatment that is comparable to the attitude of Nigerian nurses<sup>12</sup>. Almost all participating nurses (94.4%) agreed that breast is a serious disease. This widespread appreciation of the seriousness of breast cancer may explain why two-thirds of the nurses said that they would accept mastectomy if necessary. In a similar study from Nigeria where the population is similar to our own<sup>13</sup>, many more nurses (89%) indicated that mastectomy was acceptable to them. A small proportion of the nurses in this study indicated that they would consider spiritualists (15.2%) or herbalists (7.3%) for the treatment of breast cancer. This may be an indication that there are superstitious beliefs among nurses that may influence the attitude towards breast cancer. Nevertheless there was an indication of positive medical help-seeking behaviour as 135 or 81.1% of the participants will visit a doctor on the same day if they develop breast cancer and 102 or 61.8% will see a doctor within a month should they discover a lump in the breast.

The practice of the three cancer screening methods (table 7) was very variable among the participants. Most of the participants (72.1%) practiced breast self-examination in the past six months. However the proportion of the respondents who practiced breast self-examination at the recommended monthly interval (55.2%) was slightly lower than the proportion (66.7%) that indicated that they were well informed about the correct time (table 5). The level of practice of breast self-examination by the respondents in this series is higher than that reported from Nigeria<sup>13</sup> and comparable to rate reported from studies in the USA. In a study on the use of breast self-examination among black women in the USA, Jacobs and co-workers found that 89% of the women indicated practicing breast self-examination in the past year with 74% of them having done so in the past six months and 39% said that they perform breast self-examination monthly<sup>16</sup>. Other US investigators have reported similar high rates of compliance with breast self-examination<sup>17</sup>.

The use of clinical breast examination and mammography as methods of screening for breast cancer was very low among the nurses in this study. For a group of health care providers with a mean age of

44.6 and a median age of 51 years (table 1), an uptake rate of 10% for mammography in four years and 21.2% for clinical breast examination in six months is very low (table 7) and on the basis of the current recommendations on the guidelines for breast cancer screening<sup>17</sup> majority of our participants who are 40 years and above who should have had a mammogram are not compliant. This finding differs sharply from that reported from the UK where Rubin *et al.* reported very high uptake rates of between 73% and 80% for women of the various age groups that were invited for mammography and other screening programmes<sup>19</sup>.

There is no established breast screening programme in Ghana. This may be part of the explanation for the low level of practice of clinical breast examination and mammography. However the value of mammography as the method of screening for breast cancer in Ghanaian women may be limited as many patients are below 30 years<sup>7</sup> and there is no population-based data on the age specific incidence of the disease in Ghana<sup>20</sup>. Current efforts on breast cancer screening in Ghana must focus on a combination of clinical breast examination and breast self-examination.

Our nurses know enough about breast self-examination to be able to teach and propagate the method nationwide. The nurses and other midwives can be trained to perform clinical breast examination to augment the efforts of the physicians. The resulting increase in the general state of "breast awareness" may contribute to a reduction in the incidence of late stage presentation of breast cancer among our women. This in turn may have the long term benefits of a reduction in the mortality of breast cancer patients as seen in countries like the UK and USA<sup>21</sup>.

Considering the fact that there is no information on breast cancer awareness from any sector of the Ghanaian population, this report is of considerable value in providing reliable data on breast cancer awareness among an important group of health providers.

## Conclusion

The authors conclude that though there are gaps in the knowledge of breast cancer risk factors and breast self-examination the nurses who participated in this study are well informed about several aspects of the disease to enable them educate the public. Formal arrangements are required for the regular update of nurses' knowledge on breast cancer risk factors as they perform the duty of informing the general public on various aspects of the disease.

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