International Journal of Tropical Medicine 7 (1): 17-23, 2012
ISSN: 1816-3319

Nurses Practices and Knowledge of Breast Self-Examination in Selected Hospitals, Bayelsa State, Nigeria

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Abstract: Cancer incidence is now ranked as the leading cause of death in some economic developed countries of the world followed by heart disease and stroke. Nurses at present are in the frontline of care as most patients seek consultation with them. Short comings in early breast cancer detection may arise from poor practice of breast self-examinations among nurses in Bayelsa State, Nigeria. The aim of this study is to assess nurses' practice and knowledge of breast self-examination. A descriptive hospital based survey design was conducted to assess a sample of 92 nurses respondents out of a pool of 98 nurses required based on power calculation from the selected hospitals whose age ranges from 20-60 years. Data was collected using a self-report questionnaire and analysed using descriptive statistics. Results reveal that 38% of the nurses had good knowledge, 48.9% very good knowledge and 13% poor knowledge of signs and symptoms of breast cancer. Similarly, scores on risk factors shows that 43.5% had good knowledge, 39.1% very good knowledge and 17.4% poor knowledge. Distribution of knowledge of breast cancer scores with some variables shows age at first delivery to be significant ($\chi^2 = 26.6$, $p = 0.023$) determinant of knowledge. About 95.7% of the nurses knew about breast self-examination with 23.9% of them practicing breast self-examination once in a month. The 87.0% nurses knew about mammography with 92.4% of them never applied or use mammography. Further, 80.4% of the nurses knew about clinical breast examination with 81.5% of them never applied it or practice it, only 7.6% applied it within a month/year. These results suggest that nurses had very good knowledge of what BSE, CBE and mammography is but minority practiced or applied these methods. Age of first delivery also determined level of knowledge and behaviour of the respondent nurses. Therefore, compliance to knowledge by practice is recommended to all nurses.

Key words: Practice, knowledge, nurses, breast self-examination, mammography

INTRODUCTION

Breast cancer is the most common cause of cancer related deaths as well as the leading type of cancer in women (Demirkiran *et al*., 2007; Dundar *et al*., 2006). Breast cancer is responsible for 12% of deaths world wide (Balogun and Owoaje, 2004). It causes 376,000 deaths a year through out the world and about 90000 women are diagnosed every year with this disease. After cardiovascular diseases, the second most common cause of death is cancer (Hill *et al*., 2001; Ma and Yu, 2006; Askoxylaskis *et al*., 2010). The guideline for American Cancer Society encourages Breast Self Examination (BSE) for early detection of breast cancer in symptomatic women. Breast self examination is regarded as a reliable self screening tool for early diagnosis of cancer (Demirkiran *et al*., 2007). However, its usefulness is debatable as routine breast examination does not decrease cancer mortality rate. However, BSE remains valuable as a screening method that increases awareness of breast cancer (Anderson *et al*., 2003; Howard and Scott-Findlay, 2006). It is reported that every one in three persons who is diagnosed with cancer is likely to die of cancer therefore, early diagnosis of cancer possibly influences the rates of patients improvement, alleviation of the disease progress, interference with complications and limitation of the debilitation and increases life quality (Ozturk *et al*., 1999). Since, the increase of success in treating this disease is influenced primarily by early detection. American Cancer Society (ACS) recommends that a woman should know how her breast normally feels and report any breast changes promptly to their health care provider. The nurse in carrying out their role as a health care provider plays a unique role in alerting the

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community to early detection of breast cancer. This position requires nurses to have a sound knowledge and practice base of breast self-examination. However, information on practice and knowledge of breast self examination among nurses is limited among nurses in Bayelsa State, Nigeria. In recent times, the incidence of the breast cancer appears to be on the rise with a poorer outcome among Nigerians. In a developed economy, mammography, clinical breast examination and BSE are secondary prevention methods used in early detection of breast cancer.

In a depresses unstable economy with poor health facilities that are out of date, the viable option that is reliable remains BSE for access to clinical breast examination and mammography is difficult to come by because of financial involvement. Furthermore, there is under utilization or practice of BSE which might detect breast cancer early enough for treatment, prolonging the women life and reduces suffering due to lack of its knowledge. Thus, this study provides us the opportunities to assess practice and knowledge of breast self examination among nurses in Bayelsa State, Nigeria.

MATERIALS AND METHODS

This is a descriptive hospital based survey study. The study population included nurses who were employees of the hospital management board at the two main functional health institutions: The Federal Medical Centre and the University Teaching Hospital, Okolobiri both in Bayelsa State, Nigeria. A non-probability (convenience) sample method was employed to engage all nurses that fell between 20-60 years old that met the eligible inclusion criteria for the study that last over a period of 3 months (April-June of 2010).

Based on power calculations 98 nurses were the legitimate sample size needed to participate in the study. However, 92 nurses responded to the self-report questionnaire completely. Instrument for the study were made up of pretested self report questionnaire gathered from literature review containing both open and close ended questions with data information covering areas on demographics, clinical history, knowledge of breast cancer and practice of breast self examination. Before entering the hospitals contact was established with the health management boards of the participating hospitals for approval. Likewise verbal consent gained from the nurses working in these hospitals. As all needed information regarding their participation in the study was provided with respondents open to voluntary participation. The data collected were entered and analyzed using SPSS-17.0 for windows. Descriptive statistical methods for each question were carried out according to the different demographic data collected from the nurses' respondents. Statistical evaluation was accomplished using the Pearson Chi-square test (χ^2), to test the relationship of sample characteristics and categorical variables. A $p<0.05$ was regarded as significant.

RESULTS AND DISCUSSION

The socio demographic data of the respondents are shown in Table 1. About 92 nurses out of 98 legitimate sample groups calculated from power analysis that were available for the study was recruited from the two main hospitals in Bayelsa State, Nigeria. The respondents who were all nurses had an age range from 20-60 years, a mean of 38.21 and standard deviation of 45.57 years. About half of the nurses 46.7% had both the registered nursing and midwifery qualifications and 25% university qualifications. While 16.3 and 12% were qualified with registered nursing and midwifery qualifications, respectively. Most of the nurses 35.9% worked in labour ward. A total of 46.8% worked in medical and surgical wards whereas 10.9% of the nurses worked in paediatrics wards and another 6.5% in accident and emergency

Table 1: Socio-demographic data of respondents (N = 92)

Variable	Frequency (f)	Percentage (%)
Age		
10-20	1	1.1
21-30	21	22.8
31-40	40	43.5
41-50	20	21.7
51-60	10	10.9
Level of education		
School of nursing	15	16.3
School of midwifery	11	12.0
Nursing and midwifery school	43	46.7
University	23	25.0
Present ward		
Labour	33	35.9
Surgery	24	26.1
Accident and emergency	6	6.5
Paediatrics	10	10.9
Medical ward	19	20.7
Marital status		
Married	67	72.8
Single	20	21.7
Widow	2	2.2
Number of births		
None	22	23.9
1-2	24	26.1
3-4	21	22.8
Age of first delivery		
Less than or equal to	717	7.6
16-20	13	7.6
21-25	29	31.5
26-30	26	28.3
31-35	11	8.7
36-40	6	1.1

Table 2: Knowledge on signs and symptoms of breast cancer (N = 92)

Question/Statement	Respondents (N)	Percentage (%)
Bloody discharge from nipple		
Yes	49.0	53.3
No	38.0	41.3
Not sure	5.0	5.5
Asymmetric sagging from nipple		
Yes	55.0	59.8
No	35.0	38.0
Not sure	2.0	2.2
Breast mass		
Yes	79.0	85.9
No	11.0	12.0
Not sure	2.0	2.2
Enlargement of neighbouring lymph nodes		
Yes	79.0	85.9
No	11.0	12.0
Not sure	1.0	1.1
Breast skin retraction		
Yes	79.0	85.9
No	12.0	13.0
Not sure	1.0	1.1
Discoloration of nipple/Skin of breast		
Yes	72.0	78.3
No	18.0	19.6
Not sure	2.0	2.2
Nipple retraction		
Yes	74.0	80.4
No	16.0	17.4
Not sure	2.0	2.2
Score on signs and symptoms (%)		
<50	12.0	13.1
≥50<70	35.0	38.0
≥70	45.0	48.9

wards, respectively. About 72.8% of the nurses were married and 21.8% being single and <3% divorced. The 23.9% of the respondent nurses have not had any birth, 26.1% only 1-2 births and 22.8% 3-4 births. Most 31.5% were between 21-25 years old at first delivery and 28.3% at 26-35 years old at first delivery. Table 2 shows seven questions or statements with regards to knowledge on signs and symptoms of breast cancer by the nurses.

About 49 (53.3%) of the nurses had knowledge of bloody discharge with 38 (41.3%) not being knowledgeable also 55 (59.8%) had knowledge on breast asymmetric sagging occurring with breast cancer while 35 (38.0%) did not, 79 (85.9%), respectively for breast mass, enlargement of lymph nodes and breast skin retraction had knowledge on signs and symptoms of breast cancer whereas not more the 13% of nurses did not know this 72 (78.3%) knew discolouration of the nipple or skin of the breast occurs during breast cancer and18 (19.6%) did not know this with 74 (80.4%) indicating that nipple retraction is a sign and symptom of breast cancer. Overall results on the percentage score of signs and symptoms of breast cancer reveals approximately 50% (48.9%) of respondent nurses had very good knowledge of signs and symptoms of breast cancer scoring ≥70, 38% had good knowledge of signs and symptoms of breast cancer with score ≥50<70% and approximately 13% poor knowledge of signs and symptoms of breast cancer with score <50%. Table 3 shows knowledge on risk factors of breast cancer from ten questions/statements. Most respondents (84.4%) reported increases risk factor on positive family history and (72.8%) increases risk factor with ageing whereas no effect for (January 18, 2012; 3.3%) on positive family history and (16.3%) on ageing. Decreases was also reported for 6.5 and 9.8% of the nurses on family history and ageing, respectively.

Table 3: Knowledge on risk factors for breast cancer (N = 92)

Statement/Question	Respondents (N)	Percentage (%)
Positive family history of breast cancer		
Increases	78	84.8
Decreases	6	6.5
No effect	3	3.3
Don't know	5	5.4
Aging		
Increases	67	72.8
Decreases	9	9.8
No effect	15	16.3
Don't know	1	1.1
Null parity		
Increase	47	51.1
Decrease	12	13.0
No effect	8	8.7
Don't know	25	27.2
Menarche age <11		
Increases	25	27.2
Decrease	14	15.2
No effect	18	19.6
Don't know	35	38.0
Menopause >50		
Increases	57	62.0
Decreases	11	12.0
No effect	7	7.6
Don't know	17	18.5
Hormone replacement therapy		
Increases	65	70.7
Decrease	15	16.3
No effect	4	4.3
Don't know	8	8.7
Oral contraceptives		
Increases	13	14.1
Decreases	50	54.3
No effect	23	25.0
Don't know	6	6.5
Breast feeding		
Increases	13	14.1
Decreases	50	54.3
No effect	23	25.0
Don't know	6	6.5
Smoking and obesity		
Increases	75	1.5
Decreases	8	8.7
No effect	3	3.3
Don't know	6	6.5
Age of first delivery >30		
Increases	32	34.8
Decreases	7	7.6
No effect	20	21.7
Don't know	33	35.9
Score on risk factors		
<50	16	17.4
≥50<70	40	43.5
≥70	36	39.1

Also 51.1% indicated null parity increases risk (13.0%) it decreases risk for breast cancer (27.2%) referred they don't know and (8.7%) no effect. Most nurses (38.5%) don't know whether menarche age below 11 is a risk factor for breast cancer while (27.2%) indicating it increases the risk and (15.2%) its decreases it with (19.2%) responding it has no effect. Similarly, at menopause >50 years majority of the nurses (62.0%) indicated increases risk factor while (12.0%) decreases risk of breast cancer whereas (7.6%) said it has no effect and (18.5%) did not know, respectively.

The >70% (70.7%) of respondent nurses indicated that hormonal replacement therapy increases risk of breast cancer for (16.3%) its decreases it, also for (4.3%) hormonal replacement therapy has no effect and (8.7%) don't know how it affects breast cancer. Furthermore, more than half the nurses (54.3%) indicated that both oral contraceptives and breast feeding decreases risk for breast cancer will have no effect for (25.0%) the nurses while it increases the risk for another (14.1%) whereas (6.5%) did not know the response to these questions. About 75 nurses (81.5%) indicated smoking and obesity increases for developing breast cancer (8.7%) its decreases the risk while for (3.3%) it has no effect and (6.5%) they don't know, respectively. Knowledge of risk factor for breast cancer with age of first delivery >30 years shows that it increases for 34.8% of nurses' respondents, decreases for 7.6%, there is no effect for 21.7% and almost 36% (35.9%) don't know.

However, score on risk factor shows that 43.5% of the nurses had good knowledge on the risk factor of breast cancer scoring ≥50<70. About <40 (39.1%) of the nurses had very good knowledge on risk factor of breast cancer scoring ≥70 and 17.4% of the nurses had poor knowledge on risk factors of breast cancer scoring <50. Knowledge scores of breast cancer and its distribution by age at first delivery (Table 4) shows that 12 (41.4) of the respondent 28 nurses scores ≥50.0<70.0 and 16 (55.2) of the respondent 34 nurses scored >70.0% while 1 (3.4) of 9 nurses scored <50 at age of 20-25 years and being significant for age of first delivery (χ^2 = 26.6, p = 0.023). Duration of breast feeding at 1-3 months shows 3 (37.5) of the respondent 22 nurses scores ≥50.0<70.0 and 3 (37.5) of the respondent 30 nurses scored >70.0% with 2 (25.0) of 5 nurses scoring >50 and performance not being significant (χ^2 = 11.6, p = 0.335). Furthermore, educational qualification was not also significant (χ^2 = 11.6, p = 0.170) but 5 (45.2) of the respondent 35 nurses scores ≥50.0<70.0 and 4 (36.4) of respondent 45 nurses scored >70.0% with 2 (18.2) of the respondent 11 nurses scoring <50 on school of midwifery qualifications. However, summary of knowledge scores of breast cancer shows that 47.8 of the respondent nurses had a very good knowledge of breast cancer with scores of 70 and above. About 39 (42.4) of the respondent nurses had good knowledge scoring >50 but <70 while 9 (9.8) scored <50.

Table 4: Distribution of knowledge of breast cancer by score on some variables

	Percentage score				
Variables	< 50.0	≥50.0<70.0	>70.0	χ^2	p-value
Age of first delivery					
≤20	2 (28.6)	2 (28.6)	3 (42.9)	26.6	0.023
21-25	1 (3.4)	12 (41.4)	16 (55.2)		
26-30	2 (7.7)	11 (42.3)	13 (50.0)		
31-35	3 (37.5)	3 (37.5)	2 (25.0)		
≥36	1 (100.0)	0 (0.0)	0 (0.0)		
Duration of breast feeding					
<1 month	0 (0.0)	8 (50.0)	8 (50.0)	13.5	0.335
1-3 months	2 (25.0)	3 (37.5)	3 (37.5)		
4-6 months	2 (15.4)	6 (46.2)	5 (38.5)		
7-12 months	1 (5.3)	4 (21.1)	14 (73.7)		
1 year and above	0 (0.0)	1 (100.0)	0 (0.0)		
Educational qualification					
School of nursing	0 (0.0)	7 (46.7)	8 (53.3)	11.6	0.170
School of midwifery	2 (18.2)	5 (45.5)	4 (36.4)		
Nursing and midwifery Schools	7 (16.7)	16 (38.1)	19 (45.2)		
University	2 (8.7)	7 (30.4)	14 (60.9)		

Overall assessment of knowledge of practice of Breast self-examination (Table 5) shows that 88 nurses (95.7%) knew what is breast self-examination, 3 (3.3%) of the respondent nurses did not know about breast self-examination and 1 (1.1%) not sure about what is breast self-examination. About 19 (20.7%) of the respondent nurses never applied examination while 48 (52.2%) occasionally applied but not up to once in a month, 22 (23.9%) practiced breast self-examination once in a month and only 3 (3.3%) practiced breast self-examination more than once a month.

Similarly, the respondent nurses knowledge about mammography shows that 80 (87.0%) nurses knew about mammography, 3 (3.3%) did not know this whereas 9 (9.8%) was not sure they knew about mammography. About 85 (92.4%) nurses respondent never applied or used mammography, only 1 (1.1%) of the nurses respondent applied it yearly and 2 (2.2%) applied or use it every 2 years with 4 (4.3%) nurses respondent indicating use of mammography during health problems or challenges.

In response to knowledge about clinical breast examination, majority 74 (80.4%) of the nurses respondent indicated yes to knowledge of clinical examination, 6 (6.5%) of the respondent nurses did not about breast self-examination. Nurses' practice and knowledge base of breast self-examination is relevant as expected of clinical leaders with practice for they form the major component of the health care professions in the frontline of care

Table 5: Knowledge of practice of breast self-examination, mammography and clinical breast examination (N = 92)

Statement/Question	Frequency (f)	Percentage (%)
Do you know about breast self-examination?		
Yes	88	95.7
No	3	3.3
Not sure	1	1.1
If yes, how often do you examine?		
Never applied	19	20.7
Occasionally but not up to once in a month	48	52.2
Once in a month	22	23.9
More than once a month	3	3.3
Do you know about mammography?		
Yes	80	87.0
No	3	3.3
Not sure	9	9.8
If yes how often?		
Never applied	85	92.4
Apply yearly	1	1.1
Apply every 2 years	2	2.2
Apply during health problem	4	4.3
Do you know about clinical breast examination?		
Yes	74	80.4
No	6	6.5
Not sure	12	13.1
If yes how often?		
Never applied	75	81.5
Apply monthly/yearly	7	7.6
Apply during health problem	10	10.9
Knowledge score of breast cancer		
<50 (poor)	9	9.8
>50 but <70 (good)	39	42.4
70 and above (very good)	44	47.8
Total	92	100.0

among the health care team. The result reveals that the respondents who were part of the quality nurses workforce of the participating hospitals had a mean age of 38.21 years and range of 20-60 years. The selection of nurses to include all working age profile was deliberate as the age of breast cancer occurs more frequently in younger Nigeria women with similar age bracket to those obtained of many black population or African descents whose reported mean age is ≥38 years (Okobia and Osime, 2001) as confirmed in this study group. The study showed that all respondent nurses had formal level of education with at least registered nursing RNs certificates obtained from diploma nursing school or baccalaureate BNS degrees obtained from university. This enables adequate coverage of curricular in medical surgical nursing and in special focus area like oncology to give expected adequate opinion on knowledge and practice of self-examination by nursing staff. The result on demographics also shows that the nurses cut across all the workforce and areas of nursing speciality.

Knowledge on sign and symptoms of breast cancer: The knowledge of nurses on sign and symptoms of breast cancer is above average (53.3%) on bloody discharge from nipple. Similar information was gathered by Akpo *et al.* (2010) from medical students in a Nigerian tertiary institution. However, this result is non-congruous with another study from Nigeria by Okobia *et al.* (2006). The difference with the later may be due to the poor educational background of the participants whom were mostly community dwelling women. Result also shows that 60% of the nurses' respondents correctly identified asymmetric sagging of the breast as a sign and symptom of breast cancer while 86% for breast mass and enlargement of neighbouring lymph nodes, respectively. This agrees with earlier reports by Grunfeld *et al.* (2002) that identified similar condition of signs and symptoms among British women. Results further shows that the nurses had very good knowledge on changes that occurs in the skin and colour of the breast with 86, 78 and 80% of the respondent nurses, respectively admitting yes for breast skin retraction, discolouration of nipple/skin of breast and nipple retraction for sign and symptoms of breast cancer.

This result is congruous with findings from medical students by Akpo *et al.* (2010) with very good knowledge but not in concordance with knowledge on non-lump symptoms gather from women in hospitals (Maqsood *et al.*, 2009). In addition, the overall knowledge score on sign and symptoms of breast cancer shows that about 87% of nurses have adequate knowledge of the signs and symptoms of breast cancer. This is however different from the results obtained from health professionals (Akhigbe and Omuemu, 2009).

Knowledge on risk factors for breast cancer: The study reveals that the nurses' respondents had a good knowledge on the risk factors for breast cancer. A high proportion of nurses 85% knew a positive family history and aging 73%, respectively increases the risk factor of acquiring breast cancer. This finding is not different from earlier reports by Odusanya and Tayo (2001) where nurses were found to be to be very knowledgeable about the risk factors of breast cancer. The knowledge of nurses in the present study also shows that they had a good knowledge of some primary risk factors for breast cancer as increased risk of breast cancer was evidenced for null parity, menopause >50 years, hormone replacement therapy and smoking and obesity among these nurses' respondents. This is in line with a previous study that emphasized on the effects of one or more of the following from menopause, hormone replacement therapy, smoking and obesity or null parity increases risk of breast cancer (Ogundiran *et al.*, 2010). Furthermore, the nurses also found rightly that there is a decrease risk factor for breast cancer with breast feeding for >54%. In contrast, an earlier study in Nigeria indicates that there is misconception of breast feeding and risk of breast cancer (Akhigbe and

Omuemu, 2009). The reasons for this difference are not far-fetched because the nurses' respondents were all qualified certified holders of nursing certificate. The knowledge of the nurses shows that 14.1% acknowledged increased risk of breast cancer with use of oral contraceptives and 54.3% decreased risk of breast cancer whereas, for 25.0% of the nurses responded it has no effect and 6.5% don't know if oral contraceptive had any effect.

Similarly, the number of nurses who knew that age at first delivery above 30 was 34.8% of participants. This result is not as expected as a woman risk of developing cancer depends on a number of risk factors related to her hormones. Hormonal risk factors include conditions that allow high levels of oestrogen to persist for long periods of time such as early age at first menstruation (before age 12), late age at menopause (after age 55) having children after age 30 and not having children at all. However, the summary of the average scores of knowledge of risk factors for breast cancer shows that about 40% of the respondent nurses had a very good knowledge of risk factor for breast cancer as shown in Table 3. The result shown in Table 4 shows that the age at first delivery was significant (χ^2 = 26.6; p = 0.023) at highest scores of >70.0% for 55.2% nurses respondents on knowledge of breast cancer; duration of breast feeding and educational qualification of the nurses were not significant (χ^2 = 13.5, p = 0.335; χ^2 = 11.6, p = 0.170), respectively on knowledge of breast cancer. The difference in knowledge among nurses in this study could be related to their nature of work and disease pattern (Seah and Tan, 2007).

Knowledge of practice of BSE, BCE and mammography by respondent nurses: The result in Table 5 shows that about 96% of the nurses knew about breast self-examination. This is in concordance with a previous Nigerian based study which indicates professional job such as the nursing profession significantly influenced the knowledge of breast cancer (Odusanya and Tayo, 2001) but dissimilar with results by Tastan *et al.* (2011) where health motivations of the nurses was considered to enhance practice. This point was noticed among 21% of the nurses' respondents in this study as breast self-examination was never applied among them. About 24% of the nurses regularly practice BSE once a month. This result is again congruous with previous finding where rates of practice knowledge fell in this range suggesting better practice by the respondent nurses than the general population (Nejla and Ozge, 2008; Cavdar *et al.*, 2007). In yet other studies, Budden (1998) and Alkhasawneh (2007), found that less than half or few nurses has done (BSE) on monthly basis. The result showed that 87% of the nurses' respondents had knowledge of mammography as a screening tool but 92.4% nurses never applied it. This finding is not strange as observation from another African country like Uganda by Kiguli-Malwadde *et al.* (2010) found that most respondents have hardly use mammogram but may make use of this procedure only when there is health problem in which cancer is diagnosed. Similarly, 80.4% of the nurses' respondents had knowledge of clinical breast examination as a screening measure with only 7.6% applying it monthly/yearly. Nevertheless only 10.9% of the nurses' respondents apply it during health problems.

Implication for nursing practice: The results of this study shows that nurses who are in the very centre of patients care; needs both practice knowledge and theory based knowledge to give adequate information as well as sensitize their clients: women becoming aware of their breast changes by self-examination, clinical breast examination or use of mammography. For this reason nurses needs be giving an update refreshers courses to improve their lives and effectively carryout their nursing services in order to enhance outcome.

CONCLUSION

Findings of this study on nurses' practice and knowledge of breast self-examination reveals that nurses have very good knowledge of breast cancer including the knowledge of their aetiology, signs and symptoms but had a poor practice of breast self-examination, clinical breast examination and practice of mammography as fewer nurses applied or practice these methods. There is therefore, the need for nurses continued education on their need for participation in their breast examination at regular basis to be leaders by example.

RECOMMENDATIONS

From the findings of this study and observations made, the researchers have come up with the following recommendations:

- Nurses should be made at regular intervals to come up with a report of at least one of clinical breast examination or mammography in the health institutions they serve. In so doing nurses will get familiarize with their breast changes and compliance is promoted
- The governments and non-governmental organizations groups should sensitize all groups of professionals including nurses in light of the increasing waves of breast cancer in countries of developing economy

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