Original Article

Knowledge, practice and attitude of breast self, clinical breast and mammographic examinations amongst medical doctors in Bayelsa State

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Abstract

Background: Breast cancer is the most common cancer in women both in the developed and less developed world. Regular self, clinical and mammographic examination of the breast according to internationally acceptable guidelines can result in early detection of cancer in asymptomatic women thereby reducing morbidity and mortality related to the disease.

Aim: The aim of this study is to assess the knowledge, practice and attitude of breast examinations and breast cancer amongst medical doctors in Bayelsa State to achieve the desired reduction in mortality.

Methods: This is a descriptive cross-sectional study of Doctors in Federal Medical Centre, Yenagoa and Niger Delta University Teaching Hospital, Okolobiri, Bayelsa State carried out between September 1, and October 1, 2015. A structured self-administered questionnaire was designed and used to collect information from 216 medical doctors. The data were processed using SPSS Windows version 20. Summary statistics, sample frequencies and crossed tabulations were then computed.

Results: Of the 176 respondents, none had a low level of knowledge; 58 (33.0%) showed moderate level of knowledge, whereas 118 (67.0%) showed a high level of knowledge. Only 55.7% of doctors had performed breast self-examination (BSE), 16.5% clinical breast examination (CBE) and 4% mammography. However, when it was coned-down to only female doctors, it was found that whereas 54 (85.7%) of our female respondents practiced BSE, only 15 (23.8%) had CBE, and only 2 (3.2%) had done screening mammography. Majority (92.6%) believed that breast cancer can be cured if detected early, with 100% opted to seeing a doctor.

Conclusion: Convincing majority of medical doctors in our study had excellent knowledge about BSE, CBE and mammography as screening modalities, respectively, for breast cancer. Attitude towards breast cancer treatment was also positive. However, their practice levels were quite poor.

Keywords: Attitude, breast cancer, breast examinations, knowledge, practice

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INTRODUCTION

Breast cancer is the most common cancer in women both in the developed and less developed world. Globally, it is estimated that over 508 000 women died in 2011 due to breast cancer.[1] Although breast cancer is thought to be a disease of the developed world, almost 50% of breast

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cancer cases and 58% of deaths occur in less developed countries.[2]

Incidence rates vary greatly worldwide from 19.3/100,000 women in Eastern Africa to 89.7/100,000 women in Western Europe. In most of the developing regions, the incidence rates are below 40/100,000.[2]

Breast cancer in African landmass was characterised by territorial or regional differences as the incidence was 27% of cancers in North African nations (Algeria and Egypt) in contrast with 15% in sub-Saharan Africa.[3]

In Nigeria, it has been recorded as the most common cancer in the female[4] and a principal course of death in women. In the North-Western geopolitical zone of Nigeria, cancer of the breast was second to cancer of the cervix,[4] while in the South-Western geopolitical zone of Nigeria, it was the most common cancer among women.[5,6] In the North-Central geopolitical zone, breast cancer constituted 22.41% of new cancer cases enlisted in 5 years and accounted for 35.41% of all cancers in women.[7]

Early detection and management of breast cancer have been linked to better outcome indices in Western Europe and North America.[3] However, in Nigeria, most of the individuals affected present late, in advanced stages of cancer in which the treatment is best palliative.[4-6] A cross-sectional study in Nigeria involving 1000 women indicates a poor knowledge and attitude among women concerning breast cancer.[8] This is due partly to poor education or misinformation available to the general populace and the women in particular.

Risk factors that have been implicated in the development of breast cancer include female sex, increasing age, family history of first-degree relative with breast cancer, previous breast cancers or lumps with atypical hyperplasia, early menarche (12 years), multiparty, first childbirth after 30 years, late menopause (55 years).[9]

The screening methods used in breast cancer include breast self-examination (BSE), clinical breast examination (CBE) and mammography. The CBE is usually, conducted by the medical doctor or nurse while the individual at certain periods in a month on the breast to exclude any abnormal changes. The screening mammography is a low-dose X-ray examination modality with high resolution that reveals changes in the breast that may be cancerous.

Regular self, clinical and mammographic examination of the breast according to internationally acceptable guidelines can result in early detection of cancer in asymptomatic women thereby reducing morbidity and mortality related to the disease.[8,10,11] Although the American Cancer Society no longer recommends BSE due to no associated increase in survival rate, from studies in a developing country like Nigeria, it increases/aids breast awareness and can lead to the earlier presentation in breast changes.[10]

Health-care professionals particularly medical doctors play a crucial role in ensuring that the general population has access to adequate and correct information and screening modalities available for breast cancer to achieve the desired reduction in mortality. A lot depends on the conviction and practice of these professionals because it impacts on how the community will receive the information that are passed on. Therefore, the aim of this study is to assess the knowledge, practice and attitude of breast examinations and breast cancer amongst medical doctors in Bayelsa State to achieve the desired reduction in mortality.

METHODS

Study design

This is a descriptive cross-sectional study of medical doctors in Federal Medical Centre, Yenagoa and Niger Delta University Teaching Hospital, Okolobiri, Bayelsa State, carried out between September 1, and October 1, 2015.

Study area

Bayelsa State is a South-South state of Nigeria in the core of the Niger Delta, between Rivers state and Delta state. Federal Medical Centre, Yenagoa and Niger Delta University Teaching Hospital, Okolobiri, are the two tertiary institutions that provide all levels of health-care services to patients particularly from Bayelsa, Rivers and Delta states, including training and research.

Study population

This included medical doctors.

Eligibility criteria

This included medical doctors in Federal Medical Centre, Yenagoa and Niger Delta University Teaching Hospital, Okolobiri, Bayelsa State.

House officers, Corps members, Medical officers, Residents and Consultants were included while Nurses, Pharmacists, Medical Laboratory scientists, other supportive staff and Patients were excluded.

Sample size determination

A suitable sample size of doctors was selected within the target population. This sample size was derived as follows:

A prevalence rate of 15% by Parkin *et al*.[3] was used. Precision (i.e., margin of sampling error) tolerated was set at 5%, at 95% confidence interval, using the formula for cross-sectional study.

$n = pq/(e/1.96)^2$

Where n = sample size

p = prevalence rate = 15%

$q = 100 - p = 100 - 15 = 85\%$

e = margin of sampling error tolerated at 95% confidence interval = 5%

Hence, $n = 15 \times 85/(5/1.96)^2$

$n = 196$

Adjusting for attrition or noncompliance rate of 10%.

Hence, 10% attrition = $10/100 \times 196 = 19.6$.

Thus, the adjusted sample size = 196 + 19.6 = 215.6.

Working sample size ≈ 216 subjects.

Sampling method

This was a multi-stage random sampling in which a sample frame of the tertiary hospitals in Bayelsa State were obtained. There are two of such centers; Federal Medical Centre, Yenagoa and Niger Delta University Teaching Hospital, Okolobiri. Among these, Department of Obstetrics and Gynaecology, Surgery, Paediatrics, Internal Medicine, Accident and Emergency, general out-patient department and dentistry were selected by simple random sampling and the number of medical doctors to be sampled in each of these centres was predetermined. A stratified sampling by sex and rank was then done to select the number of males and females in each department to be studied. Finally, to avoid bias, academic fora like morning review and Continuing Medical Education were utilised. Questionnaires were self-administered and collected almost simultaneously.

Study instrument

A structured self-administered questionnaire was designed and used to collect information from doctors.

Data analysis

The data were processed using SPSS Windows version 20. Summary statistics, sample frequencies and crossed tabulations were then computed.

Consent and ethical approval

Permission to study was obtained from the Ethics and Research Committee of the Federal Medical Centre, Yenagoa. Verbal informed consent was obtained from each participant before inclusion in the study. The reason for the study and procedure for data collection was explained to the doctors before collection of data from them.

RESULTS

Table 1 shows the sociodemographic data of the respondents. There were more respondents in the 20–30 years (70 [39.8%]), and 31–40 years (89 [50.6%]) age groups. One hundred and thirteen (64.2%) were males while 63 (35.8%) were females. Over half (54.0%) were Ijaw followed by those of Ibo extraction (24.4%), 10 (5.7%). All were Christians and medical doctors. Eighty-seven (49.4%) were single while 89 (50.6%) were married.

Table 2 shows respondents knowledge on risk factors for breast cancer. Majority of the respondents considered female gender (96.0%), increasing age (84.7%), early onset of menstruation (77.8%), late menopause (73.3%), previous breast disease (86.4%), family history of breast cancer (97.7%), oral contraceptive usage (84.1%), nulliparity (77.9%) and smoking (83.5%) as risk factors for breast cancer. Also considered as risk factors were obesity (67.6%) and first baby after 30 years (59.7%). Most of the respondents did not consider breastfeeding (79.5%) and use of bras (61.4%) as risk factors.

Table 1: Sociodemographic data

Sociodemographic data	Frequency (%)
Age (years)	
20-30	70 (39.8)
31-40	89 (50.6)
41-50	9 (5.1)
51-60	7 (4.0)
61 and above	1 (0.6)
Sex	
Male	113 (64.2)
Female	63 (35.8)
Tribe	
Ijaw	95 (54.0)
Ibo	43 (24.4)
Yoruba	10 (5.7)
Others	28 (15.9)
Religion	
Christian	176 (100)
Muslim	0
Others	0
Department	
Doctors	176 (100)
Nurse	-
Others	-
Marital status	
Single	87 (49.4)
Married	89 (50.6)

Table 2: Knowledge on risk factors for breast cancer

Risk factors	Frequency (%)
Female gender	
Yes	169 (96.0)
No	4 (2.3)
Not sure	3 (1.7)
Increasing age	
Yes	149 (84.7)
No	20 (11.4)
Not sure	7 (4.0)
Early onset of menstruation <12 years	
Yes	137 (77.8)
No	19 (10.8)
Not sure	20 (11.4)
Late menopause	
Yes	129 (73.3)
No	27 (15.3)
Not sure	20 (11.4)
Previous breast disease	
Yes	152 (86.4)
No	10 (5.7)
Not sure	14 (8.0)
Family history of breast cancer	
Yes	172 (97.7)
No	2 (1.1)
Not sure	2 (1.1)
Oral contraceptive usage	
Yes	148 (84.1)
No	20 (11.4)
Not sure	8 (4.5)
Nulliparity	
Yes	137 (77.9)
No	27 (15.3)
Not sure	175 (6.8)
First baby after 30 years	
Yes	105 (59.7)
No	36 (20.5)
Not sure	35 (19.9)
Breast feeding	
Yes	24 (13.6)
No	140 (79.5)
Not sure	12 (6.8)
Use of bras	
Yes	28 (15.9)
No	108 (61.4)
Not sure	40 (22.7)
Obesity	
Yes	119 (67.6)
No	24 (13.6)
Not sure	33 (18.8)
Smoking	
Yes	147 (83.5)
No	8 (4.5)
Not sure	21 (11.9)

Table 3 shows respondents knowledge on the clinical presentation of breast cancer. Majority of the respondents indicated that breast cancer presents with lump in the breast (99.4%), bloody discharge (97.7%), ulceration (99.4%), skin of the breast looking like the back of an orange (98.3%) and it is the most common female cancer (73.3%). Nearly 33% indicated that breast cancer lump is usually painful while 64.2% indicated that it is usually not painful.

Table 4 shows the knowledge on screening and management of breast cancer. Majority of the respondents stated that BSE (97.7%), CBE (97.7%) and mammography (97.7%) are methods of screening/early detection of breast cancer. One hundred and fifty-six (88.7%) stated that from 20 years individuals can start BSE. More of the respondents indicated that BSE is done monthly (62.5%), followed by those who indicated it is done weekly (21.6%). Fifty-five (31.3%) stated that BSE is done in premenopausal women a week before menses while 121 (68.8%) stated a week after menses. Fifty-five (31.3%) stated that BSE is done on a specific day in the month, 86 (48.9%) stated that it is not while 35 (19.9%) are not sure. More of the respondents (60.8%) stated that screening should be done on both men and women. Majority (92.6%) indicated that breast cancer could occur in men. One hundred and sixty (90.9%) stated that surgery is a treatment modality for breast cancer, 1 (0.6%) stated the use of cytotoxics, 1 (0.6%) stated the use of radiation, 2 (1.1%) stated native/herbal/alternative while 12 (6.8%) stated prayers as management modalities for breast cancer.

Table 5 shows the practice of screening and method of treatment of breast cancer. Ninety-eight (55.7%) do BSE, while 78 (44.3%) do not. Of the 78 that do not do BSE, 59 (75.6%) stated that it is not done because it was not important while 12 (15.4%) stated that they are afraid of realising a lump. Of the 98 who performed BSE, 39 (39.8%) performed it 3 months earlier, 30 (30.6%) performed it the previous week and 26 (26.5%) performed it 1 year earlier. Majority (84.7%) stated that they use the opposite hand when performing BSE. Twenty-nine (16.5%) have had a CBE while 147 (83.5%) have not. Of the 29 who had CBE, 13 (44.8%) had it the previous week and 12 (41.4%) had it 3 months earlier. Seven (4.0%) respondents stated they have had a mammography while the majority (96.0%) stated they had not. Of the seven who had mammography, five (73%) had it once a year and two (27%) had it twice a year. Only 8 (4.5%) respondents indicated that they have had breast disease previously. All the respondents stated that if they detect a lump or breast cancer, they will see a doctor. Forty-seven (26.7%) stated that they would want a lumpectomy for breast cancer if diagnosed while 108 (61.4%) stated mastectomy. Majority (86.4%) stated that mastectomy does not cure breast cancer. Majority (92.6%) stated that breast cancer can be cured if detected early.

Table 6 shows that majority (85.7%) of the female doctors indicated that they do BSE routinely. Majority (76.2%) stated that they do not do CBE routinely. Only two (3.2%) had done mammography previously.

Table 3: Knowledge on clinical presentation of breast cancer

Knowledge on clinical presentation	Frequency (%)
Can present with lump in the breast	
Yes	175 (99.4)
No	1 (0.6)
Lump is usually painful	
Yes	58 (33.0)
No	113 (64.2)
Not sure	5 (2.8)
There can be bloody discharge	
Yes	172 (97.7)
No	3 (1.7)
Not sure	1 (0.6)
There can be ulceration	
Yes	175 (99.40)
No	1 (0.6)
The skin of the breast may look like the back of an orange	
Yes	173 (98.3)
No	2 (1.1)
Not sure	1 (0.6)
Breast cancer is the most common female cancer	
Yes	136 (77.3)
No	26 (14.8)
Not sure	14 (8.0)

Table 4: Knowledge on screening/early detection

Knowledge on screening	Frequency (%)
BSE	
Yes	172 (97.7)
No	3 (1.7)
Not sure	1 (0.6)
CBE	
Yes	172 (97.7)
No	2 (1.1)
Not yet	2 (1.1)
Mammography	
Yes	172 (97.7)
No	2 (1.1)
Not sure	2 (1.1)
From 20 years individuals can start BSE	
Yes	156 (88.7)
No	11 (6.3)
Not sure	9 (5.1)
BSE is done every	
Every 8 months	12 (6.8)
Monthly	110 (62.5)
Weekly	38 (21.6)
Occasionally	16 (9.1)
BSE is done in premenopausal women	
A week before menses	55 (31.3)
A week after menses	121 (68.8)
Should be done on men and women	
Yes	107 (60.8)
No	47 (26.7)
Not sure	22 (12.5)
Do you think breast cancer can occur in men	
Yes	163 (92.6)
No	6 (3.4)
Not sure	7 (4.0)
Treatment modalities	
Surgery	160 (90.9)
Use of cytotoxic	1 (0.6)
Use of radiation	1 (0.6)
Native/herbal/alternative	2 (1.1)
Prayers	12 (6.8)

BSE: Breast self-examination, CBE: Clinical breast examination

Table 5: Practice of breast examination

Screening practice	Frequency (%)
Do you do BSE?	
Yes	98 (55.7)
No	78 (44.3)
If no why?	
Not important	59 (75.6)
Afraid of realising a lump	12 (15.4)
Not your portion	5 (6.4)
Violation of oneself	0
Don't know how to do it	2 (2.6)
When last did you perform BSE?	
Last week	30 (30.6)
3 months ago	39 (39.8)
6 months ago	3 (3.10)
1 year ago	26 (26.5)
Do you use the opposite hand when performing BSE	
Yes	149 (84.7)
No	18 (10.2)
Not sure	9 (5.1)
Have you had a CBE?	
Yes	29 (16.5)
No	147 (83.5)
If yes, when last?	
Last week	13 (44.8)
3 months ago	12 (41.4)
6 months ago	1 (3.4)
>1 year	3 (10.3)
Have you ever had mammography	
Yes	7 (4.0)
No	169 (96.0)
If yes, how regular?	
Once a year	5 (73)
Twice a year	2 (27)
Three times a year	0
Have you had any breast disease before?	
Yes	8 (4.5)
No	168 (95.5)
If you detect a lump or breast changes you could see a	
Doctor	176 (100)
Nurse	-
Preferred method to suggest following breast cancer?	
Lumpectomy	47 (26.7)
Mastectomy	108 (61.4)
Use of drugs alone	6 (3.4)
Not sure	15 (8.5)
Does treatment by mastectomy cure breast cancer	
Yes	20 (11.4)
No	152 (86.4)
Not sure	4 (2.3)
Breast cancer can be cured if detected early?	
Yes	163 (92.6)
No	12 (6.8)
Not sure	1 (0.6)

BSE: Breast self-examination, CBE: Clinical breast examination

Figure 1 shows the distribution of knowledge on BSE among respondents: None had low level of knowledge, 58 (33.0%) showed moderate level of knowledge, whereas 118 (67.0%) showed a high level of knowledge.

Table 7 shows the relationship between cadre and knowledge on breast cancer. At $P < 0.05$, Chi-square = 0.576, difference (df) 1 and $P = 0.448$, there was no statistical significant relationship between cadre and knowledge on BSE.

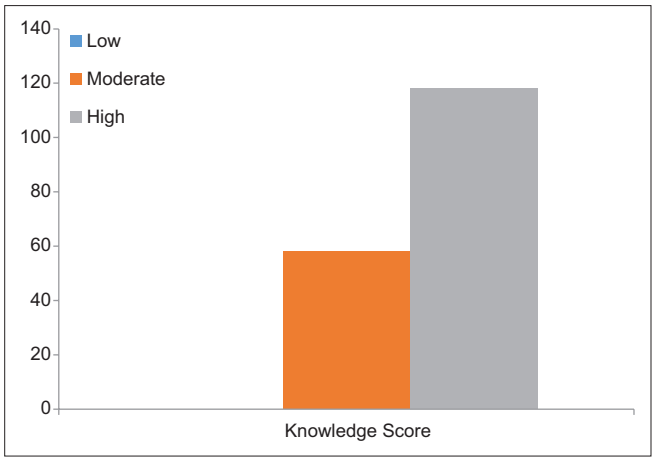

Figure 1: Distribution of knowledge on breast self-examination among respondents

DISCUSSION

The sociodemographic distribution showed that majority (50.6%) of the respondents were within 31–40 years of age. Males (64.2%) were more than the females (35.8%). Ijaw was the most dominant tribe (54.0%) followed by Ibos (24.4%). All (100%) were Christians.

In this study, 67% (118) of the medical doctors had good knowledge of the risk factors of breast cancer while 33% had fair knowledge while none had poor knowledge. The risk factors of female sex, family history of breast cancer were positively identified in 96% and other common factors included previous breast disease (86.4%), oral contraceptives (84.1%), smoking (83.5%), nulliparity (77.9%). First childbirth after 30 years was the least identified (59.7%). A Moroccan study by Ghanem *et al*.[12] related that all participants identified family history of breast cancer, late age of menopause, multiparity, early menarche, history of previous breast lumps and use of oral contraceptive as risk factors to breast cancer. Our findings were also supported by Bekker *et al*.[13] who demonstrated in their study that more than half of general practitioners in the United Kingdom were able to correctly identify risk factors assessed. Similarly, Ibrahim and Odusanya[14] in Nigeria showed that 95.6% of doctors identified increasing age as risk factor and 80% identified contraceptive use. Their least recognised factors were nulliparity (73.3%) and first childbirth of advanced age (57.8%).[14]

However, according to Cockburn *et al*.[15] in Australia, the general practitioner knowledge was limited concerning aspects of breast cancer risks. We are also aware that Doctors knowledge of risk factors in a study by Akhigbe and Omuemu were relatively lower.[16]

Table 6: Practice of breast examination among female doctors

Screening practice	Frequency (%)
BSE	
Do you do BSE routinely?	
Yes	54 (85.7)
No	9 (14.3)
CBE	
Do you do CBE routinely	
Yes	15 (23.8)
No	48 (76.2)
Mammography	
Have you done mammography before?	
Yes	2 (3.2)
No	61 (96.8)

BSE: Breast self-examination, CBE: Clinical breast examination

Table 7: Relationship between educational status and knowledge on breast self-examination

Cadre	Knowledge score			df	χ^2	*P*
	Low	Moderate	High			
Junior doctors	0	51	108	1	0.576	0.448
Senior doctors	0	7	10			
Total	0	58	118			

The American Cancer Society recommends CBE at least every 3 years from 20 to 39 years and from 40 years onwards annually. They also recommend annual mammography screening from 40 years. Routine BSE is not recommended but not discouraged.[11,17] In 2009, the United States Preventive Services Task Force recommended mammography of 1–2 years to a biennial screening interval in women between 50 and 74 years of age and that in women aged 40–49 years, routine mammography screening be individualised. They concluded that there was insufficient evidence to assess additional benefits and harm of CBE beyond screening mammography in women 40 years and above they recommended against BSE.[17] The recommendations pose a challenge to the surgeon practicing in developing countries particularly in Nigeria where Okobia and Osime 2001, documented that a larger proportion of cases occur in women below the age of 50 years[18] In a study by Udoye *et al*.[19] of histologically diagnosed breast cancers in Bayelsa State it was found that the peak age incidence was 30–40 years of age followed closely by the 5th decade.[17] This coupled with ignorance, poverty and unavailability that screening guidelines will if applied will only catch a small number of cases early in our environment.

Even though convincing majority (97.7%) of medical doctors in our study had excellent knowledge about BSE, CBE and mammography as screening modalities respectively for breast cancer, their practice levels were quite poor. Only 55.7% of doctors had done BSE, 16.5% CBE and 4% mammography. These were gotten from both male and female doctors in the study. However,

when it was coned-down to only female doctors, it was found that whereas 54 (85.7%) of our female respondents practiced BSE, only 15 (23.8%) had had CBE and only 2 (3.2%) had done screening mammography. Akhigbe and Omuemu[16] recorded 81.4% of their female doctors practice BSE. Ibrahim and Odusanya[14] noted 93.3% practice BSE monthly, 31.1% of doctors having had CBE within the last 1 year and 6.7% having had mammography.[14] They also noted 24.8% of nurses and 19% of other health professionals have had a CBE.[14] Furthermore, Oluwole in a Nigeria community found that only 30% of female health workers have ever had a CBE.[20] This goes to say that doctors and perhaps other health workers may not be "practicing what they preach to their clients." This may have a bearing on patient's awareness and then uptake of screening modalities in our locality. It was also supported by Okobia *et al*.[8] who found out in their study that only 34.9% practiced BSE, 9.1% only had CBE, and none had mammography done on them.[8] Studies have shown that knowledge and attitude of health-care providers towards breast cancer are important in the adoption of the screening modalities by women in their environment.[21] In a survey of female secondary school teachers in Ilorin Nigeria; however, 95.6% were aware of BSE but only about (4.6%) had heard about it from health personnel.[22] BSE and CBE still remain workable modalities in combating the late presentation of breast cancer in this scenario.

Possible reasons advocated by our respondents concerning their poor practice of CBE and mammography included screening modalities not being necessary, the fear of realising a lump in their breast. It is quite possible that female doctors might also be uncomfortable with having their colleagues carry out breast examination on them. Furthermore, the relative unavailability and high cost of the screening mammographic examination may have dissuaded the female respondents from having it done.

There was positive attitude towards breast cancer treatment in our study. 92.6% believed that breast cancer can be cured if detected early, with 100% opted to seeing a doctor. 61% agreed to mastectomy as the preferred method for treating breast cancer, while 90.9% chose surgery as the most effective method. This compares favourably with findings of Ibrahim and Odusanya,[14] Ghanem *et al*.[12] in Morocco and Saeedi *et al*.[23] in Riyadh Saudi Arabia. Of note is the 1.1% who agreed that native herbal alternative is a treatment option, while 6.8% took prayers as a treatment option for breast cancer.

The study was limited to doctors, hence may not be generally applied to other health workers. Furthermore, the female doctors were few and the results from them may not be a true reflection of their knowledge, practice and attitude of female doctors in general.

CONCLUSION

Convincing majority of doctors in our study had excellent knowledge about BSE, CBE and mammography as screening modalities, respectively, for breast cancer. Attitude towards breast cancer treatment was also positive. However, their practice levels were quite poor.

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Nil.

Conflicts of interest
There are no conflicts of interest

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