Original Article

Knowledge and Awareness of Breast Cancer and Screening Methods among Female Undergraduate Students in a Semi- Urban College Of Culture and Humanities, Nigeria

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Abstract

Background: The rising global incidence of malignant diseases such as breast cancer is an issue of serious concern because it is one of the leading causes of death among women globally, especially in the developing countries like Nigeria. Early detection and prompt attention as a result of adequate knowledge and awareness about breast cancer and screening methods go a long way in reducing the associated high mortality rate. Hence, the need for this study.
Aim: To assess the knowledge and awareness of breast cancer and screening methods among female undergraduate students
Methods: The study utilized a descriptive design to assess the knowledge and awareness about breast cancer and screening tests among the undergraduate female students of college of Humanities and Culture, Ikire campus of Osun State University. Multistage sampling was used to select 30% of the total population which is equivalent to 266 respondents. Data was collected by using structured questionnaire. Frequency distribution table, bar chart and chi-square using SPSS version 20 was used to analyse the data.
Results: More than half (62 %) of the respondents had good knowledge about breast cancer. Little above half that (68.2%) were aware that breast self -examination is a form of screening methods and sixty-seven percent (67.3%) were aware that mammogram is effective in detecting lumps early while 68.8% of the respondents were not aware that clinical breast examination is screening method for breast cancer. Also, 73.5% of the respondents believed that breast cancer is a serious disease and 87.9% agreed that there breast self-examination (BSE) is beneficial but only 52.3% were confident in performing BSE. Significant association was observed between the perceived level of threat from cancer and screening practice, and between perceived benefit from breast cancer screening methods and screening practice.
Conclusions: This study concluded that respondents had good knowledge breast cancer and risk factors about and they were also aware of the various screening methods.

Key Words: Knowledge, Awareness, Breast Cancer, Screening Methods.

Introduction

The rising global incidence of malignant diseases as documented by the world health organization (Khatib& Modjtabai, 2006) is an issue of serious concern, particularly in the developing countries where the increase is occurring in faster rate. Breast cancer is the most commonly diagnosed cancer and globally, it is considered the leading cause of cancer death in females, accounting for 23% (1.38 million) of the total new cancer cases and 14% (458,400) of the total cancer deaths in 2008 (Agboola, Deji-Agboola, Oritogun, Musa, Oyebadejo & Ayoade, 2009)). Breast cancer is the most common cancer found in women and one of the leading causes of death among all forms of Cancer (Smith, Cokkinides & Brawley, 2008). It is a feared disease, not only because it is life-threatening, but also it can affect a woman's sense of self-concept, her sexuality and femininity. In the past, breast cancer incidence trends in the developed country like US have shown gradual increase between 1973 and 1982 and a period of more rapid increase between 1982 and 1986 (Khatib & Modjtabai, 2006) but since 2005, the overall incidence have shown overall trends to stabilize. This is believed to be related to the use of breast cancer screening methods. Although population-based data showed that white women are affected by breast cancer at a 20% higher rate than black women, the reverse is true for women younger than 40 with black women affected 10-40% more than white women (Reisi, Javadzade & Sharifirad, 2013).

Approximately half of the breast cancer cases and 60% of the deaths are estimated to take place in developing countries (Ferlay Shin, Bray, Forman, Mathers & Parkin, 2010; Dina. Boulos & Ramy, 2014). It has been reported that each year over 1.15 million women are diagnosed with breast cancer all over the world and more than a half million die from this disease (Jemal, Thomas, Murra & Thun, 2002). In Nigeria, for example over 100,000 people develop cancer annually with majority of patients arriving medical centres at late stage, thus resulting in high mortality rate (Ozmen et al., 2009). The distribution of cancers in women in sub-Saharan Africa has shown some changes in the past few decades. Available data indicated that from 1962, carcinoma of the cervix was the most common cancer in Nigerian women but recent report from the Ibadan cancer registry indicated that carcinoma of the breast has overtaken. (Odusanya, Olufemi & Tayo, 2001).

Over the years, people had the belief that, breast cancer is an older woman's disease, therefore, the primary has been on prevention, detection and treatment of breast cancer for women who are 50 years and older (Kinnon, 2003) but in the African-American community, the disease can strike well at a younger age and this prompted physicians and cancer advocate groups to recommend that women should get baseline mammograms at 40 years. Although the importance of Breast Self - examination (BSE) is controversial (Jemal, Thomas, Murray & Thun, 2002), the American Cancer Society recommends it for early detection of breast cancer as it assists women in two main ways; first by becoming familiar with both the appearance and the sense of their breasts and second by helping them to detect any changes in their breasts as soon as possible (Smith, Cokkinides, & Brawley, 2008).

The American Cancer Society (ACS) also recommends that women, starting at age 20 should be educated on the benefits and limitations of performing a monthly Breast Self-Examination (BSE). A lot of progress had been made in cancer prevention, early detection and treatment especially in the developed country. However, very little progress has made its way to sub-Saharan Africa (Odusanya, Olufemi & Tayo, 200).

For decades public health campaigns have targeted women with the message that early detection of breast cancer translates into improves survival chances and that examination of breast and mammography are the first step to detection (Crossing and Manaszewicz, 2003). Among all the methods used for early detection of breast cancer, BSE provides a relatively simple, and low cost method that can be performed more frequently than other methods while mammography may pick up tumours long before they can be detected in any other way thus enhancing better prognosis than those whose cancer is detected in some other way (Aldridge, Lennard, Williams & Birch, 2005). Several studies have shown the importance of early

detection in enhancing breast cancer prognosis and treatment, however many women do not participate in screening activities for breast cancer. Even though BSE still remains the simplest and cost effective method till date, many women still do not practice it (Crossing and Manaszewicz, 2003) not to talk of getting regular life-saving mammograms. It is important to say that Breast Self-Examination does not replace Clinical Breast Examination and mammography but it can be considered a first line of defence because it increases a woman's comfort level with her body, familiarity with the topography of her breasts and awareness that breast health is part of total well-being.

The core issue is that for an ideal woman, it becomes imperative for her to know how her breast feel and look normally so as to be able to recognize any deviation from normal. Past studies have revealed that the knowledge of breast cancer varies widely among women (Odusanya, 2001) and that, women from different ethnic and cultural backgrounds view health differently, based on their beliefs which may influence their participation in health promoting activities such as breast cancer screening examination.

A study of cancer awareness in Nigeria showed that only 32% knew that a breast lump was a warning sign of cancer, 58.5% were not aware of most warning signs, 9.8% knew of methods of detecting cancer and 50% did not know that cancer was curable when detected early. This low level of knowledge of warning signs and detection may be responsible for late presentation, with as many as 64% of patients presenting 6 months after the onset of symptoms (Odusanya, 2001) A lot of studies had been done to assess the level of knowledge and awareness of breast cancer among undergraduate female students especially nursing and medical students but little or none of such studies was seen to have been carried out in south western part of Nigeria.

Hence the need of this study to assess the knowledge and awareness of breast cancer and screening methods among female undergraduate students of College of Culture and Humanities, Osun State University,

Research Methodology

Research Design

Descriptive design was employed to evaluate the knowledge and awareness about breast cancer and screening methods.

Study Settings

The study was carried out at college of Humanities and Culture of Osun State University, Ikire. Osun State University was formally licensed by National Universities Commission on 21 of October, 2006 as 30 State University and 80 in the Nigeria University system. It is owned by Osun state of Nigeria.

The college of humanities and culture was one of the pioneer colleges. The college is located in Ikire, the headquarters of Irewole L.G. The campus has a total land area of 41.402 hectare with a total number of 885 students as at the time of conducting this study.

Target Population

The population targeted in this study were female undergraduate students from all the departments of the college.

Sampling technique and Sampling size

There were seven departments in the college with the population of 885 students. Multistage sampling method was used to select the respondents. Simple random sampling technique was used to select the college out of the eight colleges in the university; four departments that has highest number of female students were purposively selected while simple random sampling was used to select 30% of the total population which is equivalent to 266 respondents from all the levels in each of the selected departments.

Instrument for data collection

Data was collected by using a structured questionnaire that consists of four sections: Section A consist of 8 questions eliciting the socio demographic data of the respondents and consist of eight questions, Section B assessed the respondents' level of knowledge on the incidence and risk factors of breast cancer with seven

questions. Section C seek information on respondents' awareness of breast cancer screening methods and practices with sixteen questions and Section D consists of questions on the health beliefs of respondents on breast cancer and screening using adapted Champion's Health Beliefs Model (HBM) scale. The scale was adapted and consist an added portion on Clinical Breast Examination. Forty-six items were explored on health beliefs. Each concept of the model was measured in a distinct sub-scale. The 10 sub-scales consist of three to eight items each. Items for each sub-scale are arranged on a 5 point likert-type scale with "5" indicating strongly agree, 4 – agree, 3- neutral, 2 disagree, and 1 indicating strongly disagree.

Validity and Reliability of the instrument

To determine the validity of the research work, questionnaire was constructed and presented to the scholars in the field of nursing to establish face and content validity. Pilot study was carried out using 30 respondents in the Ipetu-ijesa campus section of the University with a Cronbach coefficient value of 0.78.

Ethical consideration and permission to conduct the study

Approval was gotten from the Provost of the College**.** Each respondent was informed verbally on the aims and significance of the study, their voluntary participation, anonymity and confidentiality guaranteed Informed consent was taken from the respondents before commencement of data collection.

Data Collection Procedure

A total number of 266 questionnaires were administered directly by the researcher and his assistants to the respondents which were collected back immediately. They were checked for correctness and completeness before leaving the field.

Method of Data Analysis

Analysis was done using Statistical Package for Social Science (SPSS) version 21.Descriptive (frequency distribution tables and bar chart) and inferential statistical (chi-square) methods were used to analyze the collected data.. Knowledge of breast cancer was measured utilizing the dichotomous table in the semi-structured questionnaire.

The "yes" was scored as 3, "I don't know" as 0 and "false" scored as 0. Therefore, those that scored between 8 and 15 were said to have a good knowledge and those that scored below 8 were said to have a poor knowledge

Results

The socio demographic characteristics of the respondents, their mean age and standard deviation are 21.72 and 5.909 respectively. Majority of them are in 15 to 20 years of age, 40.2% are in 300 level. Majority 87.6%) are single while 33(12.4%) are married, 79.7% are Christians and Islam 20.3%. The knowledge of breast cancer. 62.0 % of the respondents had good knowledge about breast cancer while 38.0% had poor knowledge. The awareness of screening methods and practice, 68.2% of the respondents' were aware about BSE screening methods, 67.3% were not aware about mammogram while 31.2% were aware of clinical breast examination. The health belief about breast cancer and screening practice, 59.6% does not have a good knowledge about breast cancer,73.5% known how serious is breast cancer,87.9% have knowledge of breast self-examination also 58.5.0% does not known the barriers to breast examination while 52.3% claimed to have confidence in performing breast self-examination.

In Table 1 the socio demographic characteristics of the respondents are presented. Their mean age and standard deviation are 21.72 and 5.909 respectively. Majority of them are in 15 to 20 years of age, 40.2% are in 300 level. The majority 87.6%) are single while 33(12.4%) are married, 79.7% are Christians and Islam 20.3%. In table 2 is obbious that the62.0 % of the respondents had good knowledge of breast cancer, while 38.0% had a poor knowledge. Table 3 is presenting the awareness of screening methods and practice, 68.2% of the respondents' were aware about BSE screening methods, 67.3% were not aware about mammogram while 31.2% were aware of clinical breast examination. The health belief about breast cancer and screening practice (table 4), 59.6% does not have a good knowledge about breast

cancer,73.5% known how serious is breast cancer,87.9% have knowledge of breast self-examination also 58.5.0% does not known the barriers to breast examination while 52.3% claimed to have confidence in performing breast self-examination. Tables 5 reveals that 90.1% of the respondents known how mammogram is effective in finding lumps early and reduces worries about breast cancer, 70.3% understand the barriers to mammogram while 89.2% have good understanding of benefits of engaging in health professional examination of their breasts. Also 51.7% do not known the barriers of engaging health professional examination (CBE) while 91.3% known the important of maintain good health.

Health Belief about Mammogram, 90.1% of the respondents known how mammogram is effective in finding lumps early and reduces worries about breast cancer, 70.3% understand the barriers to mammogram while 89.2% have good understanding of benefits of engaging in health professional examination of their breasts. Also 51.7% do not known the barriers of engaging health professional examination (CBE) while 91.3% known the important of maintain good health.

Ho: There is no significant association between perceived level of threat from cancer and screening practice.

χ^2= 15.03 df= 2 P-value >0.001

The Pearson chi-square used to test the hypothesis. The Pearson chi-square derived a value of 15.03, a degree of freedom of 2 and a significant value of 0.001 which is lesser than our critical value of 0.05. Thus, there is association between the perceived level of threat from cancer and screening practice.

Ho: There is no significant association between respondent's perceived benefits from breast cancer and screening practices.

χ^2= 47.45 df= 2 P-value <0.00

Table 6 shows the Pearson chi-square used to test the hypothesis. The Pearson chi-square derived a value of 15.03, a degree of freedom of 2 and a significant value of 0.001 which is lesser than our critical value of 0.05. Thus, there is association between the perceived level of threat from cancer and screening practice.

Ho: There is no significant association between perceived level of threat from cancer and screening practice.

Table 7 showed the Fisher exact chi-square used to test the hypothesis: The Pearson chi-square derived a value of 47.45, a degree of freedom of 2 and a significant value of 0.00 which is lesser than our critical value of 0.05. Thus, there is association between breast examination and screening practice.

Ho: There is no significant association between respondent's perceived benefits from breast cancer and screening practices.

Discussion

Above sixty-two percent (62.4 %) of the respondents are within 15-20years of age and this is similar to findings of Okolie, (2012) which showed that 58% of the population studied were between the ages of 21-25 years. Majority of th students were single, this was also similar to finding of Okolie, (2012) and Hadi, Hassali, Shafie, Awaisu (2010) where 90.5% and (80.8%) of their respondents were single respectively. Less than half of the respondents' were in the 300 level and this corroborate the findings of Hadi, Hassali, Shafie and Awaisu (2010) where less than half of their respondents were first year students.

Good knowledge of breast cancer and its associated risk factors was observed among more than half of the students. Some of the students were able to state the symptoms that are suggestive of breast cancer, others they know it existed but could not say precisely the symptoms. Some of the symptoms mentioned by the women include pain, lumps and discharges such as blood and pus. The high level of knowledge was also observed in the findings of Odusanya, (2001 and Sarfo, Awuah-Peasah, Acheampong & Asamoah, (2013) where majority, of the respondents had good knowledge about breast cancer and BSE. However this as in contrast to the level of knowledge reported among students in Turkey where low knowledge level was reported. (Ko, Sadler, Ryujin, and Dong, 2003).

The findings from this study showed that majority of the respondents are aware of breast self-examination as a screening method for breast cancer and this is in agreement with the finding of Al Junaibi & Khan (2011) where majority of the students were well informed about BSE as a screening method for breast cancer. This was also observed by Odusanya, (2001); Okolie (2012) and Boulos & Ghali (2013) This finding is similar to the results of another study conducted in Malaysia (Hadi, Hassali, Shafie and Awaisu, 2010)

Table 1: socio demographic status of respondents

Variables	Frequency	Percentage
Age		
15-20	106	39.8
21-25	150	56.4
26-30	10	3.8
Total	**266**	**100.0**
Level of education		
100level	20	7.5
200 level	55	20.7
300 level	107	40.2
400 level	84	31.6
Total	**266**	**100.0**
Marital status		
Single	233	87.6
Married	33	12.4
Total	**266**	**100.0**
Religion		
Christian	212	79.7
Islam	54	20.3
Total	**266**	**100.0**

Table 2: Respondents' knowledge about breast cancer and risk factors

Level of knowledge	Frequency	Percentage
Good knowledge	165	62.0
Poor Knowledge	101	38.0
Total	266	100.0

Table 3: Awareness of the screening methods and practice

Screening methods	Levels of Awareness	Frequency	Percentage
Breast Self – Examination	Aware	144	68.2
	Not aware	122	45.8
	Total	266	100.0
Mammogram	Aware	87	32.7
	Not aware	179	67.3
	Total	266	100
Clinical Breast Examination	Aware	83	31.2
	Not aware	183	68.8
	Total	266	100

Table 4 Health Belief about breast cancer and screening practices

Level of health belief and screening of breast cancer's	Frequency	Percentage
Susceptibility to breast cancer(personal risk of breast cancer)	130	59.6
Seriousness of breast cancer	169	73.5
Benefit of breast self -examination (BSE)	181	87.9
Barriers to breast self- examination (BSE)	107	58.5
Confidence in performing breast self-examination (BSE)	103	52.3

Figure 1: Health belief about mammogram or X-ray of the breast

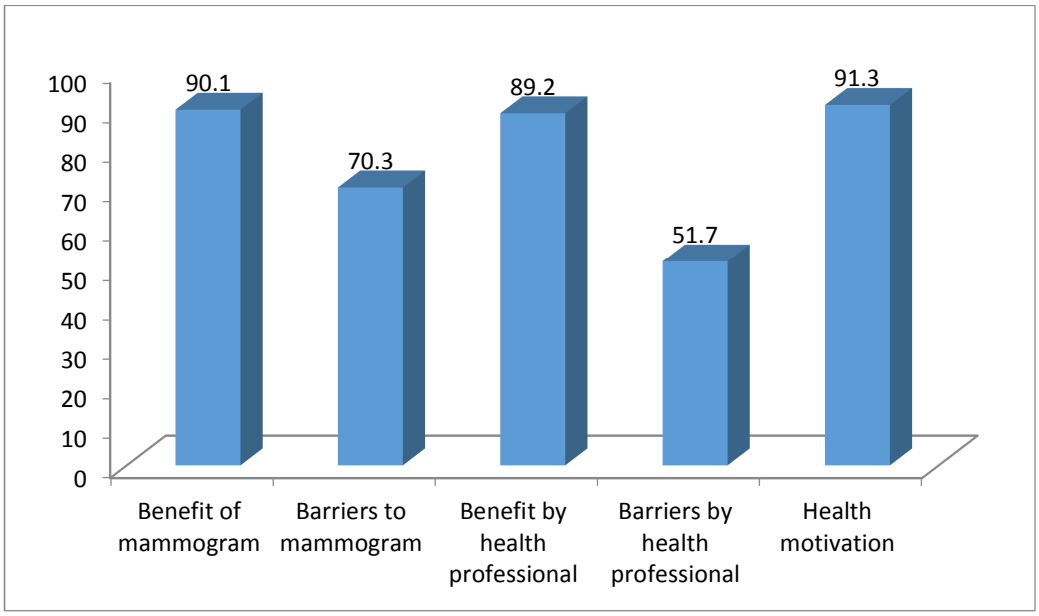

Table 6: Hypothesis one

. Perceived level of threat	Screening practice		Total
	Screened	Not screened	
Highly perceived	37	9	46
Moderately perceived	31	44	75
Low perceived	33	112	145
Total	101	165	266

χ^2= 15.03 df= 2 P-value >0.001

Table 7: Hypothesis Two

Screening practice	Benefit of breast examination			Total
	Highly Benefit	Moderately benefit	No benefit	
Practice	82	19	0	101
Not practice	15	77	73	165
Total	97	96	73	266

χ^2= 47.45 df= 2 P-value <0.00

Above half of the respondents believed they had confidence in performing BSE, while majority of their respondents were aware that BSE is a Breast cancer screening method. This finding is also supported by Sarfo, Awuah-Peasah, Acheampong & Asamoah, (2013) where 60% of their respondents stated breast self-examination as a method of breast cancer detection.

Low awareness of mammomgram as a screening investigation for breast cancer was observed in this study, this was also observed by Nemenqani, Abdelmaqsoud, Al-Malki, Oraija & Al-Otaibi, (2014) where just few mentioned stated mammography as a method of breast screening. Sarfo, Awuah-Peasah, Acheampong & Asamoah, (2013) also recorded a low level of awareness of mammogram among the participants .However, Okolie (2012) reported a high level of knowledge about mammography as a breast cancer detection method among women of reproductive age.Also findings from this study recorded less than half of the students are aware of Clinical Breast Examination as a screening method. This was reported by Sarfo, Awuah-Peasah, Acheampong & Asamoah, (2013) in which 15% of their respondents' stated clinical examination of the breast as a screening method. However, the findings was contrary to findings of Nemenqani, Abdelmaqsoud, Al-Malki, Oraija & Al-Otaibi, (2014) where 66.7% were stated Clinical Breast Examination as a screening method for breast cancer.

The Pearson chi-square used to test the hypothesis: Respondents' perceived level of threat from cancer would not influence their screening practice. The Pearson chi-square derived a value of 15.03, a degree of freedom of 2 and a significant value of 0.001. The sig. value is lesser than our critical value of 0.05. Thus, there is association between the perceived level of threat from cancer and screening practice.

The above findings confirmed the reports in Turkey by Reisi, Javadzade, & Sharifirad, (2013) and in other places. Majority of the women who performed BSE (21/49) reported that they practice in monthly because they want to detect any lump early.

From this study, the main reason for not performing BSE were lack of self-confidence and poor attitudes towards health promoting activities. This supported findings by Al Murri, Wilson, Lannigan, Doughty, Angerson, McArdle, & McMillan, (2007):Karayurt, Özmen, & Çetinkaya, (2008) and Secginli, & Nahcivan, (2006).

In the present study, only the level of education has been significantly linked with respondents screening practices. The findings revealed that the higher the level of education, the more the likelihood that a women will practice BSE. This

corroborated studies cited by Maxwell, Bastani & Warda (2000): Leung, McKenzie, Martin, Dobson, & McLaughlin, (2014). For example, the level of education of a woman is likely to influence a women's adherence to mammography screening. Also a woman with higher level of education is likely to report promptly to the hospital for proper examination if any symptoms suggestive of cancer and seen or felt. The finding is in contrast to study by Moodi, Mood, Sharifzadeh, Shahnazi & Sharifirad, (2011) that educated women often to practice BSE. The other demographic variables – marital status, age and religion have no significant influence on the screening practice of these women.

The women's commonest source of information on BSE was through health care professional (47%). This was followed by media (television and radio) which constitute 4.5%, and family and friend (1.1%). The same is observable for other screening methods. These too are in line with studies by Ko, Sadler, Ryujin, & Dong, (2003)) among the US minority groups. It was shown that health care professional remain the commonest sources of information. Other studies by Kahn, Fox, Krause-Kelly, Berdine, & Cadzow, (2006) and Thomas and Fick (2005) are equally in agreement.

Health Beliefs about Breast Cancer and Screening Tests: Examining the relationship between beliefs of the women (using the HBM variables) and practice, the study found that self-efficacy (self-confidence) and intention to seek health promoting behaviour were significant predictors of BSE. Intention to seek preventive health behaviour was found to have a strong influence on practice of BSE. These findings also supported the addiction of behaviour intention as a mediator between the HBM dimensions and behaviour as reported in other finding.

In contrast to other studies which state that perceived (Norman, & Brain, (2005), perceived barriers (Nahcivan, & Secginli, (2007 and Canbulat, & Uzun, 2008) and perceived susceptibility (e.g. Nahcivan, & Secginli, predictors of preventive behaviour, the present study has shown no significant relationship between the variables and respondent screening practices.

The findings of this study support Barron, Foxall, & Houfek, (2005) findings that perceived benefits, seriousness and susceptibility were not predictors of BSE However major challenge. BSE however, remains the most accessible and cost effective method for Nigerian women and this need to be promoted.

In Nigeria generally, where mammography screening is not easily affordable to average Nigerian women (especially students), BSE remains the most accessible and cost effective option for the women. Past literatures and the present study have confirmed that health care providers remain the major sources of information to the people on breast issues. The nurse is in an excellent position to encourage and teach preventive behaviour. He/she should combine approaches in encouraging women to be compliant with screening especially BSE and to do it regular and correctly through:

- Education /Information: Providing regular information to women on breast cancer and screening methods. With this, they will be empowered to identify deviation from normal especially in their breast.

The significant finding in their study that perceived barrier was the most consistent health belief concept related to BSE is in contrast with present study. This study supports other findings that non-significant effect is typically reported to perceived severity (Murray and McMillan 1993 as cited by Umeh, & Rogan-Gibson, (2001); Owens, Daly, Heron, & Lemster, 1987 as cited by Norman, & Brain, (2005); Rutledge, Barsevick, Knobf, & Bookbinder, (2001) and Cohen, 2006).

Most women have a good perception of the benefits of all the screening method and they do not perceived many barriers in relation to their practice. For example, less proportion of the women believed or agreed that BSE can increase their worries about breast cancer or take too much time or doubt its effectiveness. With mammogram however, a good proportion of the women belief that it is not easily affordable in Nigeria considering the economic situation of an average Nigerian student. This further confirmed the low

awareness level about mammogram in the population.

Recommendations

Based on the findings of this study, these were recommended:

- The techniques of BSE should not only be taught, it should be demonstrated using the model of the breast. Women should be allowed to practice.
- Women need to be reminded and encouraged to perform BSE which should be done as routinely such as monthly. The nurse can also play advocacy role between the government and the people. They should encourage a sponsored periodic community sensitization and awareness activities by the local health authority on the general health of the women including breast awareness. Media programme including jingles which is presented in language that can be easily understood by people could also be used to provide necessary information.

Conclusion

One easy and accessible way of detecting any abnormality in the breast is through breast awareness among which BSE remain the commonest. Women of reproductive age need to be encouraged to be responsible for their own health and well-being. They need to be encouraged to perform BSE regularly and earnestly report any abnormality to the health care providers. Nurses are rightly positioned to advocate for healthy behaviour and by so doing, there will be reduction in the mortality associated with breast cancer.

Venue of the study

The College of Humanities and Culture, Osun State University, Ikire Campus, Osun State

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