

Original Research Article

Barriers Associated with Breast Cancer Screening among Women of Child Bearing Age in Calabar Municipality, Cross River State, Nigeria

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Abstract

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The study investigate the Barriers Associated with Breast Cancer Screening among Women of Child Bearing Age in Calabar Municipality, Cross River State, Nigeria. The sample for the study consisted of 400 respondents which were randomly selected from 70 EdimOtop, 106 IkotIshie and 147 IkotOmin from Calabar Municipality, Cross River State. Four specific objectives were developed as follows: (i) To identify the cultural barriers associated with breast cancer screening among women of child bearing age in Calabar Municipality. (ii) To ascertain the socioeconomic barriers associated with breast cancer screening among women of child bearing age in Calabar Municipality. (iii) To identify the health system barriers associated with breast cancer screening among women of child bearing age in Calabar Municipality. (iv) To ascertain the personal barriers associated with breast cancer screening among women of child bearing age in Calabar Municipality. This study supports the findings of Ahmad (2015) who reported that one fifth of Arabic mothers with poor knowledge stated that their culture depicted women who carry out breast cancer screening as promiscuous women.

Keyword: Associated Barriers, Breast Cancer Screening, Women of Child Bearing Age

INTRODUCTION

Globally, breast cancer is the most commonly occurring cancer in women, comprising 23% of new cases and 14% of cancer-related deaths; furthermore, half of the cases and 60% of the related deaths occur in developing countries (Jemal, Bray, Ferlay, Ward and Forman, 2015). Incidence and mortality rates for cancer has increased over the second half of the 20th century and are likely to continue to surge substantially according to World Health Organization (WHO) projections (WHO, 2014). In 2012, the world health cancer report estimated an unprecedented 14 million new cases and 8.2 million cancer related deaths, with the figure expected to rise by almost 70% over the next 2 decades (WHO, 2014). Breast cancer is now the most common cancer both in mortality is 12 per 100,000 in Nigeria compared to 15 per 100,000 in the USA (Akinagbe, Abudu and Obafemi,

developed and developing regions with around 690,000 new cases being diagnosed annually in the developed regions and around 92,000 in Africa (International Agency for Research on Cancer, 2014). Breast cancer is the leading cause of cancer death in females' worldwide and it accounted for 14% of the total cancer deaths in 2008 (Jemal, Freddie, Center, Ferlay, Ward and Forman, 2011).

Although Breast cancer is the leading cause of cancer deaths in females worldwide, the fatality rates tend to be higher in economically developing countries. The incidence of breast cancer in Nigeria is estimated to be 25 cases per 100,000 populations compared to 93 per 100,000 in the United States of America (USA). However, (2015). There is evidence of emerging disparity in long-term mortality trends, with mortality rising in parallel with

incidence in some countries yet declining in others despite rising incidence rates (Smith, Caleffi, Albert, Chen, Duffy and Franceschi, 2015). In developed countries, although incidence rates are high for breast cancer, death rates have been decreasing over the past 25 years (Frisby, 2014). A lot of factors might account for this growing disparity between the economically developed and developing countries.

Variation in incidence rates may largely stem from greater availability of early detection measures as well as health seeking behaviours of women in developed countries. Moreover, effective therapy may help lower breast cancer death rates after detection. Patient's delay (delay between individuals' first awareness of breast abnormality and initial medical consultation) is a common factor that contributes to late detection of breast cancer and presentation at any healthcare facility. It is believed that around 20–30% of women with symptoms of breast cancer wait three months before consulting their physicians (Ramirez, Westcombe, Burgess, Sutton, Littlejohns and Richards, 2016).

Studies undertaken in Africa suggest low knowledge of breast and cervical cancer awareness. This tends to impact on attitudes to uptake of screening resulting in late diagnosis in many women. Again, fatalism, fear, embarrassment, lack of trust in health services, lack of education has been cited as barriers to early presentation of the disease in African American women (Mbuka-Ongona and Tumbo, 2013). These conditions affect not only the health and lives of the women, but also their children, families, communities and the nation at large. Research stipulates that, early detection is an important determinant for better prognosis of several kinds of cancer including breast cancer (Lee, Liedke, Barrios, Simon, Finkelstein and Goss, 2014). Furthermore, treatment of early stage breast cancer is typically simpler and more cost effective than treatment of its advanced episodes. Where healthcare resources are scarce, early detection positively impacts the delivery of breast cancer treatment, that is, treatment in an earlier stage is likely to be less complex and more affordable (Anderson and Jakesz, 2013).

Breast cancer is one of the most commonly diagnosed cancers worldwide which account (1.7 million, 11.9%) in 2012 and there were 6.3 million women alive who had been diagnosed with breast cancer in the previous five years. Since the 2008 the mortality rate of breast cancer is increased by 14%. Breast cancer is also the most common cause of cancer death among women (522,000 deaths in 2012) and the most frequently diagnosed cancer among women in 140 of 184 countries worldwide. It is also the leading cause of cancer death in less developed countries of the world. Even though the incidence of breast cancer is higher in developed countries but the mortality is higher in less developed countries due to lack of early detection and management service as well as limited awareness of

early signs and symptoms of cancer among the female folk irrespective of their career or age (WHO, 2014).

In Nigeria, breast cancer is the second leading cause of death seen in females (WHO, 2014). In a study on the prevalence of breast cancer in Nigeria, it was reported that there are at least 116 cases of advanced cancers per 100,000 women every year. Also, findings from the study revealed that the frequency of breast cancer had risen over that of non-Hodgkin's Lymphomas and cervical cancer in Nigeria (Nwachukwu and Chigbu, 2015). The relative frequency of breast cancer among women in Nigeria were, 37.5% in Lagos, 35.3% in Ibadan, 29.8% in Calabar, 17% in Eruwa and 28.2% in Ife Ijesha. The major factor responsible for the high rates of breast cancer was inadequate knowledge of preventive measures for breast cancer among the female folk (Banjo, 2015).

To reduce the breast cancer mortality rates in developing countries such as Nigeria, it is necessary to improve strategies related to the control and early detection of the disease. Thus, various screening practices such as clinical breast examination, ultrasonogram, mammography, and self-breast examinations have been recognized (Nelson, 2012). Although the effectiveness of each practice is still questionable, rather a crucial issue lies in the fact that few women actually participated in any of the screening practices. A Beijing survey showed that only 43% of 911 women over 35 years of age women participated in any breast cancer screening practice (Zhao, Li, and Wang, 2012). Shanghai cancer survey on 739 women also showed that most women were aware of the benefits of early breast cancer screening from the information in newspaper or periodicals, yet participation rate was quite low (Chen, Xia, Oakley, Jia, and Deng, 2014).

In Cross River State, it was noted that there is a high morbidity and mortality rates in females due to breast cancer (Babatunde, 2015). This was reported to be as a result of poor awareness and practice of breast cancer screening. This deficit in knowledge and practice of breast cancer screening was mostly observed among those women of child bearing age found in rural communities of Cross River State. Therefore, the mortality and morbidity rate can be reduced if these women have proper knowledge and actually practice breast self-examination (Kayode, Akande and Osagbemi, 2015). This therefore motivated the researcher to embark on this study which aimed to assess the barriers associated with breast cancer screening among women of child bearing age in Calabar Municipality, Cross River State, Nigeria.

OBJECTIVES

The purpose of this study aimed at identifying the barriers

associated with breast cancer screening among women of child bearing age in Calabar Municipality, Cross River State, Nigeria.

The study specifically looked into the following;

1. To identify the cultural barriers associated with breast cancer screening among women of child bearing age in Calabar Municipality.
2. To ascertain the socioeconomic barriers associated with breast cancer screening among women of child bearing age in Calabar Municipality.
3. To identify the health system barriers associated with breast cancer screening among women of child bearing age in Calabar Municipality.
4. To ascertain the personal barriers associated with breast cancer screening among women of child bearing age in Calabar Municipality.

Research questions

What are the cultural barriers associated with breast cancer screening among women of child bearing age in Calabar Municipality?:

What are the socioeconomic barriers associated with breast cancer screening among women of child bearing age in Calabar Municipality?

What are the health system barriers associated with breast cancer screening among women of child bearing age in Calabar Municipality?

What are the personal barriers associated with breast cancer screening among women of child bearing age in Calabar Municipality?

Research hypothesis

The hypotheses of this study were;

1. There is no significant relationship between age and the barriers associated with breast cancer screening among women of child bearing age in Calabar Municipality.

LITERATURE REVIEW

Concept of breast cancer screening

The three primary means of breast cancer screening are mammography, Clinical Breast Examination (CBE), and Breast Self-Examination (BSE) (Center for Disease Control, CDC, 2013). The American Cancer Society advocates for yearly mammograms for women aged 40years and above and breast examinations every 3years for women between the ages of 20 and 30years (CDC, 2013). Breast self-examination (BSE) is a simple and cost effective method of breast cancer screening in limited resources countries. BSE is a formalized practice

that a women is taught to examine her own breast regularly (usually monthly after 20years.) During the breast self-examination (BSE), a women systematically inspect, and palpate her each breast using her contralateral (opposite) hand with her ipsilateral arm raised above her head. She performs her examination both in lying and standing position. Usually it is better to examine the breast in front of mirror so that she can inspect any sort of asymmetry or dimpling (Anderson, Braun, Lim, Smith and Taplin, 2013).

The BSE is done in an attempt to detect any form of lump which might be an early stage of breast cancer earlier and reduce mortality. Several studies based on breast cancer patient's retrospective self-reporting on their BSE have shown a positive relation with early detection of breast cancer and BSE (Smith, Caleffi, Albert, Chen and Duffy, 2015). There are also evidence that most of the early breast cancer is self-discovered.

On the other hand, evidence from recent studies has raised the question of efficacy of teaching BSE. Two randomized control trial of BSE that was conducted in St. Petersburg, Russia and Shanghai, China showed no clear evidence to support the role of routine BSE (Thomas, Gao and Ray, 2012; Semiglazov, Moiseyenko and Manikhas, 2009). Neither of these studies showed a reduction in the risk of dying from breast cancer in women who were taught BSE. Based on these result, plus the result of multiple observational studies, a working group of IARC concluded that there is inadequate evidence that BSE can reduce mortality from breast cancer (Odusanya and Tayo, 2011). However, other researchers do not agree on this issue. Their view is that the absence of evidence of a benefit is not the same as evidence of no benefit (Smith, Caleffi, Albert, Chen and Duffy, 2015). In the Shanghai Trail there are some points worth noting. First, it was a trial of BSE instruction, not on BSE. Secondly, half of the tumors among women in the control group were stage 1 or in a better position compared to the other population. Finally trial showed 8% reduction in node positive disease and an 11% reduction in stage T2 in group offered BSE training. This suggests that in the future if follow up continued, a reduction in the mortality of similar size would be possible (Odusanya and Tayo, 2011).

Cultural barriers associated with breast cancer screening among women of child bearing age

Ahmad (2015) carried out a descriptive cross sectional study on breast self-examination in terms of knowledge, attitude, and practice among Arabic mothers. The study was conducted among 348 mothers. Findings revealed that majority of the respondents had poor knowledge of breast self-examination (43.3%) while 41.2% were with fair knowledge. The majority of poor knowledge level was among first-time mothers then second-time mothers

respectively (28.9% and 10.3%) while the good knowledge was among mothers with four children than those with three respectively (8.2% and 4.1%). One fifth of the mothers with poor knowledge (21.6%) stated that their culture depicted women who carry out breast cancer screening as promiscuous women. This formed the basis of their low knowledge on breast cancer screening. In the study carried out by Gwarzo, Sabitu and Idris (2009) among 251 nursing mothers in Zaria, Nigeria, showed that 47.8% conducting breast self-examination practice while majority of participants who never practice breast self-examination mentioned that breast self-examination was not carried out by women with royalty in their bloodline. Findings revealed that only women who were not royalties screened their breast for breast cancer signs and symptoms.

Musallam, Junaibi and Khan (2011) carried out a study on knowledge and awareness of breast cancer among mothers in Muscat, Sultanate of Oman. The study used a cross sectional survey design to collect data from 170 mothers. Results revealed that 134(85.35%) participants were well informed that BSE is used as a screening method for breast cancer. However, only 77% aware of the correct step in performing BSE. Only 114(72.61%) participants correctly identified that BSE should be performed monthly on a regular basis, though only 96 (61.1%) respondents knew the correct timing for performing BSE which is a week after menses. Also, results from the study showed that 12.5% of the women did not practice any form of breast cancer screening because they were consistently treated for ailment with herbal medications. In another research conducted by Montazeri, Vahdaninia, Harirchi, Harirchi, Sajadian, Khaleghi (2008) in Iran, findings showed that among 290 mothers, 31%, 21%, and 9% had knowledge about BSE, clinical examination, mammography respectively and 39% of respondents knew nothing about any of screening methods. Their knowledge regarding frequency of BSE was 17% of participants respond monthly BSE and 20% agrees occasional BSE. When asked why they knew little about BSE, most of the women replied that they were from royal families who were not allowed to practice any form of breast cancer screening as they were found to be medically fit.

In a study on assessment of breast cancer awareness among nursing mothers in Ajman by Al-Sharbatti, Shaikh, Mathew and Al-Biate (2014), it was reported that there was an average knowledge level of BSE among 211 nursing mothers in Ajman, United Arab Emirates. Findings showed that more than half of the mothers (46.2%) had never heard about BSE. Majority of respondents 86.5%, of participants had low/below average knowledge scores regarding early detection of breast cancer. The vast majority of the participants did not aware of the recommended frequency of BSE (98%) or its timing in relation to their menstrual cycle (94%). Results also showed that BSE and any other form of

breast cancer screening was perceived to be unnecessary as only traditional herbal treatments could prevent and cure breast cancer.

Jong, Kyong, Chun, Hyo, Eil and Rhayun (2011) carried out a study on breast cancer screening practice and health-promoting behaviour among Chinese women. A correlational research design was used to recruit a convenience sample of 770 women living in four cities (Beijing, Shanghai, Guangzhou, and Xi'an) in China. Participants completed self-report questionnaire consisting of general characteristics, breast cancer screening, health promoting behaviours, perceived benefits and perceived barriers. The participants were mostly 36-55years old (51.3%), married (86.8%), pre-menopause (77.7%), had children (83.4%), and breastfed (73%). About 60% of Chinese women participated in some type of breast cancer screening practices, among them only 60(7.8%) women knew and used mammography, ultra-sonogram and breast self-examination. Only 7.8% of women reported that they performed all screening practices of mammography, breast ultrasonogram, and BSE. Akinagbe, Abudu and Obafemi (2015) carried out an evaluation of the awareness of breast cancer and screening practices among women in some rural communities of Nigeria. The study was a descriptive cross-sectional study utilizing self-developed structured questionnaire. Reliability of the instrument was determined and alpha correlation values range between 0.81 and 0.95 for the different components of the questionnaire. Data was processed using descriptive analysis and associations tested with Chi-square at 5% level of significance. The results of the findings showed that 52.7% of the women had adequate knowledge about breast cancer risk factors and symptoms. Regarding the women's awareness about breast cancer screening methods, 52.8% and 51.7% of women have heard about Breast Self-Examination (BSE) and Clinical Breast Examination (CBE) respectively. However, few numbers of respondents (3.9%) were aware about mammography and these are people who did it for the purpose of diagnosing breast problem. Majority of the women (72.8%) did not practice BSE which is the most readily available screening method.

Socio-economic barriers associated with breast cancer screening among women of child bearing age

Financial issues influence access to health care through factors such as insurance status, transportation to screening sites, loss of job-related income (taking unpaid time off to attend screening sites), and child care (Ahmed *et al.*, 2012). These factors affect African Americans disproportionately since more African Americans live in poverty compared to European Americans (Ahmed *et al.*, 2012). Consequently, a poor financial situation is directly proportional to poor education and understanding about

breast cancer screening and the importance of early detection and treatment. Poverty also contributes to poor dietary habits among African Americans. They consume more fats and fewer fruits and vegetables (Sheppard, 2013).

Aloisio-da-Costa, Lourenco, Edmundo, Valter, Peres, Thiago and Lattore (2015) carried out a study on barriers related to non-adherence in a mammography breast-screening program during the implementation period in the interior of Sao Paulo State, Brazil. A total of 17,964 women were subjected to mammography during the first 2 years of the project implementation (the period from April 2003 to March 2005). The mean age was 51.1 years (range, 40-69 years; SD = 7.8). The majority of the women in the age group 40-49 years (48.2%) belonged to the socioeconomic class C/D (85.4%) and had an educational level of <8 years of education (86.3%). A total of 76 cases of cancer were identified among the evaluated patients of which 43.2% were at clinical stage 0+I breast cancer. Among the women who underwent mammography screening, 7560 (42.1%) had never been examined previously. All analyzed factors were associated (v^2) with the variable "no previous mammogram" (II). A higher proportion of the women who had never undergone a mammogram were found in the youngest age group (40-49 years), compared with the oldest age groups (50-59 years and 60-69 years; 48.0% vs. 35.1% and 39.3%; $p < 0.001$). The proportion of women who had not previously undergone a mammogram was also higher among women of the socioeconomic classes D and E, compared with those of classes B and C ($p < 0.001$). Thus, it was concluded that inadequate finances, was one of the basic factors that affected women using mammography for breast cancer screening.

Ahmad (2015) reported findings which revealed that transportation fare and cost of breast cancer screening were the barriers that limited the patronage of breast cancer screening services among Arabic mothers. Results from the study showed that underutilization of mammogram and clinical breast examination was high among mothers with low financial backgrounds. Similar findings were discovered in another study carried out by Gwarzo, Sabitu and Idris (2009) among 251 nursing mothers in Zaria, Nigeria. The results from the study revealed that most nursing mothers (53.7%) asserted that money for transportation to health care facilities and cost of performing a mammography hindered them from having their breast screened for signs and symptoms of breast cancer. Statistically, there was a significant relationship between nursing mothers' financial status and their utilization of mammogram for breast cancer screening in health care facilities. A significant relationship also existed between the age and barriers associated with breast cancer screening among women of child bearing age. Musallam, Junaibi and Khan (2011) reported that even though knowledge of breast cancer

screening methods maybe high among mothers in Muscat, Sultanate of Oman, and other factors can limit the utilization of breast cancer screening services. In their study on knowledge and awareness of breast cancer among mothers, results revealed that clinical breast cancer screening and mammography were not utilized by mothers. Findings showed that finances restrained most mothers in Muscat from visiting health care facilities to carry out clinical breast cancer screening while the cost of mammography was unaffordable.

Health system barriers associated with breast cancer screening among women of child bearing age

Low breast cancer screening rates may result in higher incidences of late-stage diagnosis. Such cases receive inadequate treatment as a result of few skilled health care workers who know how to carry out breast cancer screening in health care facilities (Ahmed, Winter, Albatineh, and Haber, 2012). As most African Americans live in conditions of poverty, this factor has emerged as the chief barrier to breast cancer screening behaviour. Aloisio-da-Costa, Lourenco, Edmundo, Valter, Peres, Thiago and Lattore (2015) reported that unavailability of mammography in health care centres was the basic factors that affected women using mammography for breast cancer screening in a study on barriers related to non-adherence in a mammography breast-screening program during the implementation period in the interior of Sao Paulo State, Brazil.

In 2014, long queues and health care workers' inadequate knowledge of mammography were part of the barriers to the utilization of mammography among 211 nursing mother in Ajman, United Arab Emirates in a study by Al-Sharbatti, Shaikh, Mathew and Al-Biate. Sarfo, Awuah-peasah and Acheampong (2013) reported that the discovery of negative attitude and low practice of clinical breast examination and mammography among 291 mothers in Ghana was correlated with health care workers' knowledge on these breast cancer screening procedures. Findings from the study showed that 35.1% of the 291 mothers stated that the mammography and clinical examination of the breast was not always adequately explained by doctors nor any other health care worker. Also, 11.7% of the mothers said that health facilities that had mammogram and ultrasonogram were quite distant from their homes, hindering them from patronizing such services. A correlation between women's age and barriers associated with breast cancer screening among women of child bearing age. Similar findings was made by Motilewa, Ekanem and Ihesie (2015) who reported that 119 out of 311 mothers in Uyo, Akwa Ibom State asserted that they felt utilizing CBE and mammogram was not effective because their perceived that the health care workers were not skillful nor had enough knowledge on how to carry out a breast cancer

screening procedure with the mammogram nor ultrasonogram.

Personal barriers associated with breast cancer screening among women of child bearing age

Studies revealed that individuals that have regular preferred and trusted care provider are two times as likely to undergo mammography screening in comparison with women without a primary care provider, and those who visit for mammography are more likely to revisit. Due to poverty, African American women remain underserved and fail to draw benefits from access to primary care (Sarfo, Awuah-peasah and Acheampong, 2013). Sarfo, Awuah-peasah and Acheampong (2013) opined that inadequate knowledge was a factor that hinder BSE practice among mothers. It was reported that in their study that younger participants who had significantly lower knowledge scores in comparison to older participants did not practice BSE. According to Ameer, Abdulie and Pal (2014) factors that hindered the practice of BSE were; no signs or symptoms of breast cancer (28.8%); forgetfulness (17%); fear of detecting some abnormality (16.4%); lack of privacy (15.4%). Findings from the study revealed that there was a significant relationship between nursing mothers' financial status and their utilization of mammogram for breast cancer screening in health care facilities.

In a study conducted by Omolase (2008), among mothers admitted into Federal Medical Center, Owo, Ondo State observed that out of 100 respondents, it was also observed that 56% of the respondents stated that their practice of BSE was their positive attitude towards it as well as their adequate knowledge of it. In a study on knowledge, attitude and behaviours of nursing mothers regarding breast self-examination in Turkey by Memis (2009), it was observed that out of 244 nursing mothers, the first-time mothers had negative attitudes about breast self-examination. In a study carried out in Tehran, Iran by Haji, Montazeri, Jarvandi, Ebrahimi, Haghightat and Arirchi (2011), it was revealed that the attitude of mothers towards breast self-examination (BSE) contributed to the poor practice of BSE. In another study carried out in Qassim region of Saudi Arabia by Saulat, Abdullah, Muzamil (2012), it was discovered that the nursing mothers had a positive attitude with regards to breast self-examination and thus, practiced BSE every month.

Balogun and Owoaje (2010) also hold the view that in rural setting the poor and under-educated rural women have very low knowledge about breast self-examination, thus, their low responsible attitude towards BSE as well as their practice of it. Aloisio-da-Costa *et al.* (2015) carried out a study on barriers related to non-adherence in a mammography breast-screening program during the implementation period in the interior of Sao Paulo State, Brazil. A total of 17,964 women were subjected to

mammography during the first 2years of the project implementation (the period from April 2003 to March 2005). The mean age was 51.1years (range, 40-69years; SD = 7.8). The majority of the women in the age group 40-49years (48.2%) belonged to the socioeconomic class C/D (85.4%) and had an educational level of <8years of education (86.3%). A total of 76 cases of cancer were identified among the evaluated patients of which 43.2% were at clinical stage 0+I breast cancer. Among the women who underwent mammography screening, 7560 (42.1%) had never been examined previously. A higher proportion of the women who had never undergone a mammogram were found in the youngest age group (40-49years), compared with the oldest age groups (50-59years and 60-69years; 48.0% vs. 35.1% and 39.3%; $p < 0.001$). Women with a low educational level (illiterate or <8years of education) were less likely to have undergone a mammogram ($p < 0.001$). Thus, it was concluded that inadequate or no knowledge of mammography, was one of the basic factors that affected women using mammography for breast cancer screening.

According to Jong, Kyong, Chun, Hyo, Eil and Rhayun (2011) among 770 women living in four cities (Beijing, Shanghai, Guangzhou, and Xi'an) in China, the reasons for not doing screening practices in Chinese women was simply did not feel that breast cancer screening was necessary (>30%) and followed by "too busy" in 16% of women. Almost half of the participants replied that they "don't have a chance" for the screening practice which is "too expensive" or "not convenient". In a study by Sami, Kurubaran, Aied, Mohd and Sharea (2012), the factors associated with poor practice of breast self-examination, are grouped into level of knowledge, psychological, cultural and environmental factors and perception. Several barriers to the practice of breast cancer screening was discovered in a study titled "barriers in health care to breast cancer: perception of women" carried out by Gonçalves, Travassos, De-Almeida, Guimarães and Gois (2014). An exploratory descriptive design was used for the study. The sample consisted of 58 women with breast cancer receiving chemotherapy and registered in the public oncology ambulatory of Aracaju-Sergipe. Data collection was carried out between October 2011 and March 2012 by semi-structured interviews, and data were processed using the SPSS, version 17. Findings from the study showed that the barriers associated with breast cancer screening were; organizational or health service barriers, geographic barriers, sociocultural barriers, economic barriers and personal barriers. Organizational or health service barriers included; waiting list for scheduling consultation, tests and treatment (38.6%), diagnosis error of a health professional (11.5%), delay in receiving test results (7.7%). Geographic barriers include; difficulty of access to transportation provided by SMS (7.7%) and transfer to another city (7.7%). Socio-cultural barriers include; lack of information about the pathology (7.7%) and caring for

a family member (3.8%). Economic barriers include; financial difficulty to pay for examinations, diagnosis and treatment (3.8%). Personal barriers include; availability of doctors (29.2%), nurses (4.2%) and family/friends (4.2%).

Tsu-Yin, Hsing-Fang and Brady (2014) carried out a study on demographics and perceptions of barriers toward breast cancer screening among Asian-American women. This descriptive study used a cross-sectional design with self-administered questionnaires completed by 315 Asian-American women from four groups (i.e., 119 Filipinos, 109 Asian Indians, 51 Chinese/Taiwanese, and 36 Koreans) who resided in southeastern Michigan. Based on chi-square test results, the specific barriers for which the prevalence differed significantly ($p < 0.05$) based on ethnicity, age, length of U.S. residency, and education were selected as dependent variables for the subsequent multivariate analysis. Ninety-two percent of the women had health insurance, and 83% reported that their insurance covered mammograms. In terms of mammography screening, about 84% of participants reported ever having had a mammogram, and 59% reported that their mammogram was up-to-date. The survey asked the respondents to name up to three of the most important reasons that prevented women from having a yearly mammogram. More than one-fifth (23.3%) of the valid responses indicated barriers that could be classified as "logistical." These included "lack of time," "scheduling," "location," "poor facility," and related responses. The second most frequently named barrier was discomfort (19.0%), which included experiencing physical pain during the mammogram procedure, feeling embarrassed or ashamed, and feeling uncomfortable if the mammogram was conducted by a male or strange health professional. About 18% of responses were related to the cost of having a mammogram, or lack of insurance was a major concern. Interestingly, of these 315 respondents, 30 participants reported that their mammogram was not covered by their health insurance, and about two-thirds reported that such issues (financial or lack of insurance) were barriers for them.

METHODOLOGY

Study design

The study design that adopted in this study is the descriptive design. The design is considered appropriate, as it is useful in gathering data about the beliefs, opinions, attitudes, behaviours and records of events that can be analyzed and interpreted to measure relationships between and among variables. According to Boroughs (2010), descriptive design is useful in revealing current conditions that exist between specific events. It also involves orderly collection, analysis, interpretation and reports of, pertinent facts and information concerning

situation or an enterprise as far as conditions and circumstances permit.

Target population

This was made up of all women of child bearing age residing in Calabar Municipality which sums up to 53,981 (National Population Census, 2006).

Accessible population

This was made up of all women of child bearing age in the three wards selected for the study. The selected three villages were Edim Otop, Ikot Ishie and Ikot Omin, summing up to 5,142. The criteria for eligibility include: those who were willing and able to give informed consent, women between the ages of 18 and 49 years and those able to communicate their feelings. Those that were excluded from the study included all those without aforementioned criteria.

Sample size

Using Taro Yamane's formula, the sample size was calculated as stated below;

$$n = \frac{N}{1 + N(e^2)}$$

Where, N = population size = 53,981

e = significance coefficient = 0.05

$$n = \frac{53,981}{1 + 53,981(0.05)^2}$$

$$n = \frac{53,981}{1 + (53,981 \times 0.0025)}$$

$$n = \frac{53,981}{1 + 134.9525}$$

$$n = \frac{53,981}{134.9525}$$

$$\therefore n = 400$$

The sample size for this study was four hundred (400) women of child bearing age. However, 80% of the sample size was used summing up to 320 women of child bearing age.

Table 1 showed the population distribution of three wards selected for this study which made up the accessible population for the study. From the accessible population, the 80% of the calculated sample size was shared for each village and their percentages.

Sampling technique

Three villages were selected using simple random sampling technique. Balloting with replacement was carried out by a neutral person who was not part of the study to avoid bias. This was done by assigning numbers to the villages. Numbers 1-10 were written on a piece of paper each, the pieces of paper were then folded and

reshuffled and the neutral person was asked to pick three out of the ten folded pieces of paper. The following villages were picked: Edim Otop, Ikot Ishie, and Ikot Omin. The number of participants selected was proportionate to the size of the village. These were Edim Otop 70, Ikot Ishie 106, and Ikot Omin, 147 giving a total of 320 participants. This was obtained from finding the percentage of total population of each stratum, and then dividing each stratum percentage with the sample size. Women were gathered together after due permission was obtained from village heads and women leaders in their various meeting places within the community settings. To avoid bias, simple random sampling was employed to select participants according to the predetermined number. This was done using simple balloting with replacement by writing yes or no on pieces of paper in to a hat and given to those child bearing women who met with the inclusion criteria; only those who picked yes were selected.

Instrument design

The research instrument used for this study was a self-developed and well-structured questionnaire which consisted of 26 items with five (5) Sections A, B, C and D. Section A was on the socio-demographic data of the respondents with 6 items. Section B had 5 items that elicited responses on cultural barriers; Section C contained 5 items which focused on socio-economic barriers; Section D was made up of 5 items on health system barriers and Section E consisted of 5 items on personal barriers associated with breast cancer screening among women of child bearing age.

Method of data collection

The women leader was contacted for town crying to invite all women of child bearing age to the town halls of each wards that were selected. The research assistants with the researcher distributed 320 copies of the questionnaire to the respondents face to face. This was carried out on five (5) working days of a week during the evening hours of the day (4pm – 6pm) when the women of child bearing age gathered at the various town halls of the wards selected for this study.

The respondents were informed by the researcher that the questionnaire will be used solely for academic and research purposes. They were encouraged to give honest and sincere responses to the questions in the questionnaire. They were also assured of absolute confidentiality as regards to the information they gave. The questionnaire was administered and retrieved on the spot. This lasted for 3 weeks.

Validity of the instrument

After developing the instrument, a copy of it was sent to the researcher's supervisor and other experts in the field to assess for face and content validity and corrections were made to ensure that the items relate to the objectives of the study.

Reliability of the instrument

A test re-test method was used to ascertain the reliability of the instrument. Here 10% of the total population that was 32 persons. Thirty (32) copies of the instrument were given to women of child bearing age in Calabar South who met the criteria but were not part of the study sample. After two weeks, similar copies of the instrument were administered to the same population. Both of them were subjected to statistical analysis using a Pearson Product Moment of reliability coefficient which gave 0.73 at a 0.05 level of significance. The result obtained revealed that the instrument was reliable and valid for data collection purposes.

Method of data analysis

Data collected was collated, processed and analyzed using descriptive statistics and were presented as simple percentages, frequency tables and pie chart. The hypothesis was tested using Chi-Square statistics via the electronic software, SPSS version 20.

RESULTS

Socio-Demographic data of the respondents

Results in [Table 1](#) revealed that most of the respondents, 97(31.5%) were between 28-32years of age. Based on the marital status, majority of the respondents 132(42.9%) were married. More than half of the respondents, 240(77.9%) had between 1-3 children while 249(80.8%) respondents practiced Christianity as their religion. Majority of the respondents, 203(65.9%) respondents had attained tertiary educational level whereas 82(26.6%) were traders/business women.

Research question one

What are the cultural barriers associated with breast cancer screening among women of child bearing age in Calabar Municipality?

Results in [Table 2](#) show that 67(21.7%) respondents asserted that mammography is prohibited by their culture

Table 1. Ward Population Distribution (Three Wards), sample size and percentages

S/No	Villages	Population of women of child bearing age	80% of total sample size	percentage of sample size
1	EdimOtop	950	70	21
2	Ikot Ishie	1667	106	33
3	Ikot Omin	2525	147	46
	Total	5142	320	100

Source: Ward Population Distribution, (2018)

Table 2. Socio-Demographic data of the respondents (n = 308)

Variable	Frequency	Percentage
Age		
18-22years	59	19.2
23-27years	71	23.0
28-32years	97	31.5
33-37years	46	14.9
38-42years	23	7.5
43years and above	12	3.9
Total	308	100
Marital status		
Single	75	24.3
Married	132	42.9
Divorced/separated	59	19.2
Widow	42	13.6
Total	308	100
Number of children		
1-3	240	77.9
4-6	57	18.5
7 and above	11	3.6
Total	308	100
Religion		
Christianity	249	80.8
Islam	59	19.2
Total	308	100
Educational level		
No formal	24	7.8
Primary	36	11.7
Secondary	45	14.6
Tertiary	203	65.9
Total	308	100
Occupation		
Housewife	42	13.6
Clergy	4	1.3
Seamstress	53	17.2
Farmer	31	10.1
Trader/businesswoman	82	26.6
Student	19	6.2
Civil servants	81	26.3
Total	308	100

Table 3. Cultural barriers associated with breast cancer screening among women of childbearing age

Variables	Yes		Response No		Total	
	No.	%	No.	%	No.	%
Mammography is prohibited by my culture because it allows women to show their breast to men who are not their husbands.	67	21.7	241	78.3	308	100

Table 3. Continue

Women who screen their breast are considered to be very promiscuous in my culture.	104	33.8	204	66.2	308	100
Women from royal families are not allow to carry out any form of breast cancer screening.	37	12.0	271	88.0	308	100
Breast cancer screening is seen to be practiced by only the less privilege since they are not well taken care of by their family.	42	13.6	266	86.4	308	100
My tribe believes that breast cancer screening is not necessary since we drink herbal medications for preventing breast cancer.	58	18.8	250	81.2	308	100

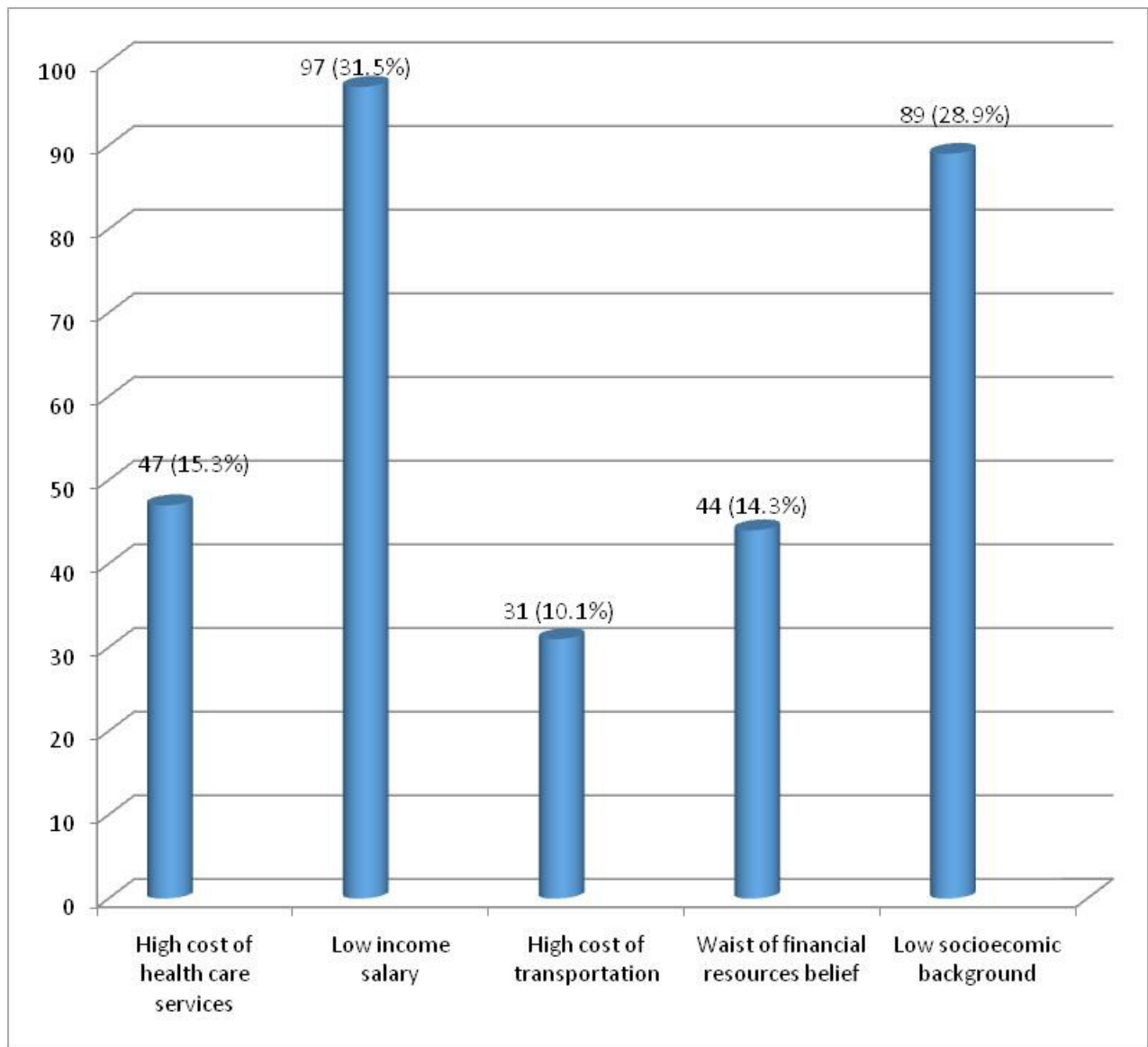


Figure 1. Socioeconomic barriers associated with breast cancer screening among women of child bearing age

because it allows women to show their breast to men who are not their husbands; 104(33.8%) asserted that

women who screen their breast are considered to be very promiscuous in their culture; 317(80.3%) asserted that

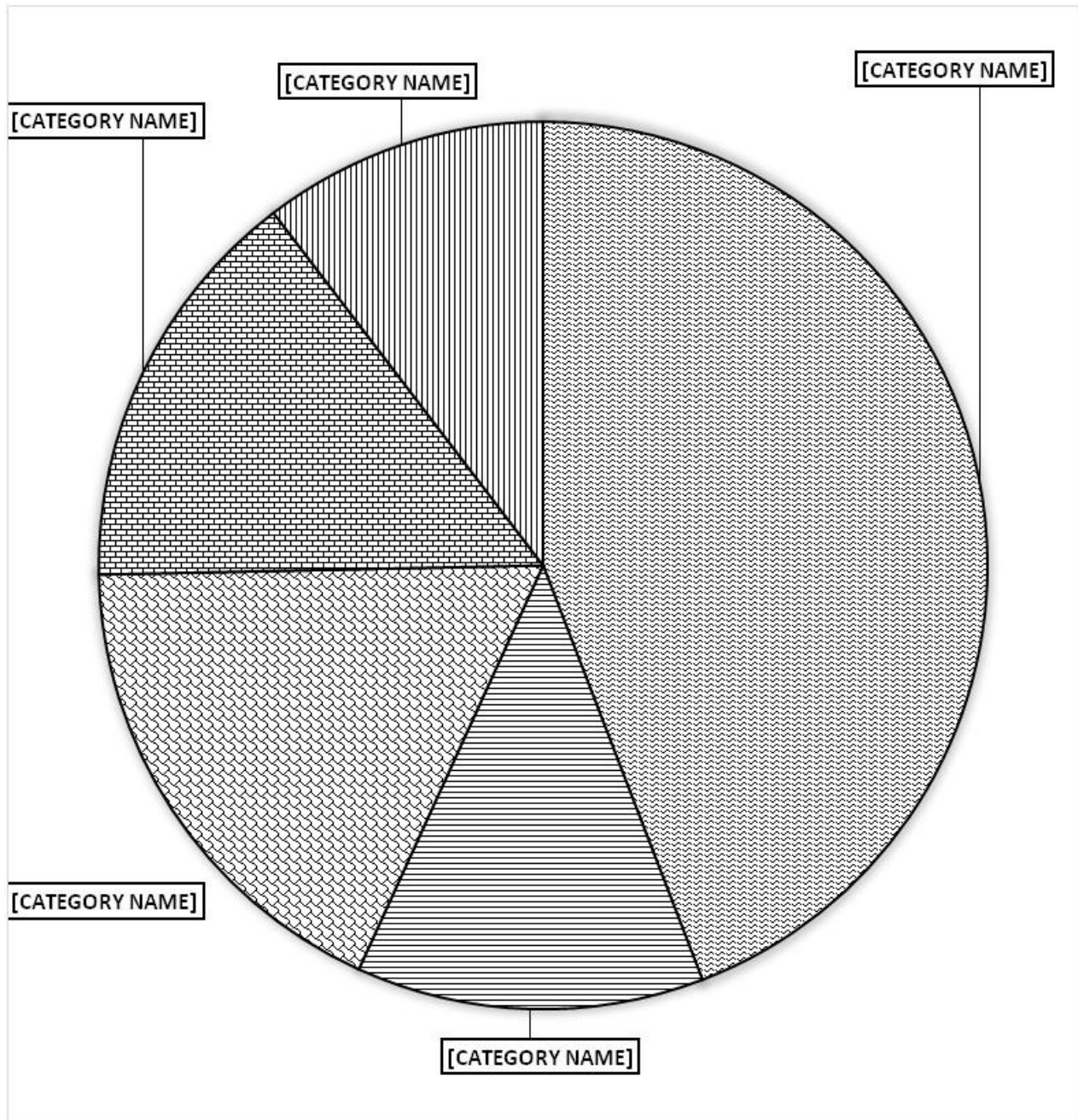


Figure 2. Health system barriers associated with breast cancer screening among women of child bearing age

aging workers cannot cope with pressure at offices the way the youngers do; 37(12.0%) asserted that women from royal families are not allow to carry out any form of breast cancer screening; 42(13.6%) asserted that breast cancer screening is seen to be practiced by only the less privilege since they are not well taken care of by their family and 58(18.8%) asserted that their tribe believes that breast cancer screening is not necessary since they drink herbal medications for preventing breast cancer.

Research question two

What are the socioeconomic barriers associated with breast cancer screening among women of child bearing age in Calabar Municipality?

Results in **Figure 1** reveal that majority of the respondents, 97(31.5%) affirmed that low income/salary was a socioeconomic barrier associated with breast cancer screening among women of child bearing age; 89(28.9%) affirmed that low socioeconomic background

Table 4. Personal barriers associated with breast cancer screening among women of childbearing age

Variables	Yes		Response No		Total	
	No.	%	No.	%	No.	%
I do not screen my breast because it is very embarrassing when done in front of the doctor.	201	65.3	107	34.7	308	100
Fear of discovering I have breast cancer makes me not to practice any form of its screening procedure.	237	76.9	71	23.1	308	100
It is not necessary to screen my breast at all so I would not bother.	118	38.3	190	61.7	308	100
My family do not support the idea of carrying out a breast cancer screening procedure.	31	10.1	277	89.9	308	100
My inadequate knowledge of breast cancer screening procedures discourages me from carrying it out.	261	84.7	47	15.3	308	100

Table 5. Chi – Square Analysis of influence of age on barriers associated with breast cancer screening among women of child bearing age.(N = 308)

Barriers associated with Breast Cancer Screening	Age of women of child bearing					TOTAL Value	X ² cal.
	18 – 25	26 – 33	34 – 41	42 above	TOTAL		
Cultural Barriers	40(26)	35(26.5)	5(22.2)	10(15.1)	90	99.8	
Socioeconomics	15(15)	26(15.3)	6(12.8)	5(8.7)	52		
Health System	14(21.3)	20(21.8)	15(18.2)	25(12.4)	74		
Personal barrier	20(26.5)	10(27.1)	50(22.7)	12(15.5)	92	308	
TOTAL		89	91	76	52		

❖ Significant at .05 level; df = 9; critical X² = 16.92

of women of child bearing age is a socioeconomic barrier associated with breast cancer screening; 47(15.3%) affirmed that high cost of health care services is a socioeconomic barrier associated with breast cancer screening; 44(14.3%) affirmed that the belief that breast cancer screening is a waste of resources remains a socioeconomic factor associated with breast cancer screening and 31(10.1%) affirmed that high cost of transportation to the health care facility is a socioeconomic barrier to associated with breast cancer screening.

Research question three

What are the health system barriers associated with breast cancer screening among women of child bearing age in Calabar Municipality?

Results in **Figure 2** show that most of the respondents, 136(44.2%) acknowledged that long queues was a health system barrier associated with breast cancer screening;

55(17.9%) acknowledged that no privacy during treatment was a health system barrier associated with breast cancer screening; 46(14.9%) acknowledged that inadequate knowledge on breast cancer screening among doctors was a health system barrier; 39(12.7%) acknowledged that having more male health care workers in a health center was a health system barrier associated with breast cancer screening and 32(10.4%) acknowledged that inadequate breast cancer screening services was a health system barrier associated with breast cancer screening among women of child bearing age.

Research question four

What are the personal barriers associated with breast cancer screening among women of child bearing age in Calabar Municipality?

Results in **Table 4** showed that most of the respondents, 201(65.3%) asserted that they do not

screen their breast because it is very embarrassing when done in front of the doctor; 237(76.9%) asserted that fear of discovering they have breast cancer makes them not to practice any form of its screening procedure; 118(38.3%) asserted that it is not necessary to screen their breast at all so they would not bother; 31(10.1%) asserted that their family do not support the idea of carrying out a breast cancer screening procedure and 261(84.7%) asserted that their inadequate knowledge of breast cancer screening procedures discourages them from carrying it out.

Hypothesis testing

There is no significant relationship between age and the barriers associated with breast cancer screening among women of child bearing age in Calabar Municipality. To test this hypothesis Chi-Square statistics was used. The result is presented in Table 5.

Result from Table 5 below shows that the X^2 calculated value of 99.8 is greater than the critical X^2 value of 16.92 required for significance with 9 degree of freedom. This means that Age significantly influence barrier associated with breast cancer screening among women of child bearing; hence the alternative is upheld.

DISCUSSION OF FINDINGS

This discussion is based on the variables used for the study.

Cultural barriers associated with breast cancer screening among women of child bearing age in Calabar Municipality

On the cultural barriers associated with breast cancer screening among women of child bearing age in Calabar Municipality, findings of this study showed that mammography was only prohibited in the culture of few respondents (21.7%). The culture of most respondents 104(33.8%) considered women who carried out breast cancer screening to be very promiscuous. The culture of some respondents, 58(18.8%) did believe that breast cancer screening was not necessary since they drank herbal medications for preventing breast cancer. This study supports the findings of Ahmad (2015) who reported that one fifth of Arabic mothers with poor knowledge stated that their culture depicted women who carry out breast cancer screening as promiscuous women. The findings is in line with the study of Musallam, Junaibi and Khan (2011) who observed that 12.5% of mothers in Muscat, Sultanate of Oman did not practice any form of breast cancer screening because they were

consistently treated for ailment with herbal medications. This findings agrees with the observation of Gwarzo, Sabitu and Idris (2009) who reported that majority of 251 nursing mothers in Zaria, Nigeria who never practice breast self-examination mentioned that breast self-examination was not carried out by women with royalty in their bloodline.

Socioeconomic barriers associated with breast cancer screening among women of child bearing age in Calabar Municipality

On the socioeconomic barriers associated with breast cancer screening among women of child bearing age in Calabar Municipality, the findings from the study showed the barriers included; low income/salary (24.0%), low socioeconomic background of women of child bearing age (22.1%), high cost of health care services (15.3%) and high cost of transportation to the health care facility (10.1%). This findings supports the observation of Aloisio-da-Costa *et al.* (2015) who reported that inadequate finances, was one of the basic factors that affected women using mammography for breast cancer screening. This finding is in line with the study of Musallam, Junaibi and Khan (2011) who reported that finances restrained most mothers in Muscat from visiting health care facilities to carry out clinical breast cancer screening while the cost of mammography was unaffordable. This findings agrees with the study of Ahmad (2015) who reported that transportation fare and cost of breast cancer screening were the barriers that limited the patronage of breast cancer screening services among Arabic mothers.

Health system barriers associated with breast cancer screening among women of child bearing age in Calabar Municipality

On the health system barriers associated with breast cancer screening among women of child bearing age in Calabar Municipality, findings showed that there are; long queues (44.2%), no privacy during treatment (17.9%), inadequate knowledge on breast cancer screening among doctors (14.9%) and inadequate breast cancer screening services (10.4%). The above finding is in line with the study by Aloisio-da-Costa (2015) who reported that unavailability of mammography in health care centres was the basic factors that affected women using mammography for breast cancer screening. The findings also agrees with the observation of Al-Sharbatti *et al.* (2013) who reported that 11.7% of the mothers said that health facilities that had mammogram and ultrasonogram were quite distant from their homes, hindering them from patronizing such services.

Personal barriers associated with breast cancer screening among women of child bearing age in Calabar Municipality

On the personal barriers associated with breast cancer screening among women of child bearing age in Calabar Municipality, findings of this study showed that most respondents feared they could discover they have breast cancer (76.9%), felt embarrassed before the doctor while carrying out breast cancer screening (76.9%) and felt it was not necessary to screen their breast (38.3%). This study supports the findings of Marie (2007) who opined that with age, sleep becomes shorter and more fragmented and reflects a need for less sleep but simply an inability to achieve what is needed easily due to advancing age. This findings agrees with the observation of Sarfo, Awuah-peasah and Acheampong (2013) who reported that inadequate knowledge was is a factor that hinder BSE practice among nursing mothers. The findings is in line with the study of Ameer, Abdulie and Pal (2014) who observed that fear of detecting some abnormality and lack of privacy were part of the personal barriers associated with breast cancer screening among women of child bearing age.

Relationship between age and the barriers associated with breast cancer screening among women of child bearing age in Calabar Municipality

On there is no significant relationship between age and the barriers associated with breast cancer screening among women of child bearing age in Calabar Municipality, findings of this study showed that the null hypothesis was rejected because the Chi – Square(X^2) calculated value of 99.8 is greater that the critical X^2 value of 16.92. This implied that there is a significant relationship between age and the barriers associated with breast cancer screening among women of child bearing age in Calabar Municipality. This study supports the findings of Gwarzo, Sabitu and Idris (2009) who reported a significant relationship between nursing mothers' age and the barriers associated with breast cancer screening among women of child bearing age. This findings agrees with the observation of Sarfo, Awuah-peasah and Acheampong (2013) who reported that a correlation existed between age and barriers associated with breast cancer screening among women of child bearing age.

CONCLUSION

Based on researcher findings, it was concluded that the major barriers associated with breast cancer screening among women of child bearing age in Calabar Municipality were prohibition of mammography and stigmatization of breast screened women be very

promiscuous as basic cultural barriers; low income/salary/low socioeconomic background of women of child bearing age as the key socioeconomic barriers; long queues and lack of privacy during treatment which constitute the most health system barriers and fear of discovering one is infected with breast cancer and feeling embarrassed before the doctor while carrying out breast cancer screening as personal barriers. Consequently, these barriers limited the women of child bearing age from carrying out breast cancer screening even though there were cheap ways to screen their breast.

RECOMMENDATIONS

Based on the findings of the study, the following recommendations were made:

- Academic nurses in tertiary schools should endeavour to educator female students on the importance of screening for breast cancer.
- Government and non-governmental organizations should endeavour to carry out workshops or seminars in rural areas so as to educate women of child bearing age on the importance of carrying out breast cancer screening.
- Provision of services for breast cancer screening or test should be made available in health facilities by government, so as to enable health workers detect breast cancer at its early stage.

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