

Breast Malignancy: Evaluating Perception and Adoption of Methods of Screening among Women in Urban Areas of Ondo State Nigeria

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Abstract:-

➤ Background:

Mortality from breast malignancy (cancer) is assuming a worldwide epidemic among women in recent times. The increasing mortality rate is partly due to poor level of adoption of early detection methods. The purpose of this study was to evaluate the perception and adoption of methods of screening for breast malignancy among women in Ondo State, Nigeria.

➤ Methods:

A cross sectional design was employed to carry out this research while 427 respondents were randomly selected through multistage sampling technique. The data instrument was piloted for accuracy and reliability. Statistical analysis was done using SPSS Version 25. Findings: This study indicated that most respondents (63.9%) were young adults >35years while the mean age was 38.0 years. There was a positive perception (90.2%) about breast malignancy screening among respondents. Notably, majority (82.2%) of respondents utilized Breast Self-Examination (BSE) screening method while only (14.1%) utilized mammography. Findings also revealed obesity and age as predictors of breast malignancy while family/friends remain the potent source of awareness of breast malignancy screening. Chi-square test revealed an association between occupation and practice of breast malignancy screening (P-value = 0.04*; $X^2 = 8.02$) and educational qualification (P-value = 0.000*; $X^2 = 31.9$). Findings also showed a correlation between perception and breast malignancy screening method ($r = 0.218^{**}$; p-value = 0.00) and reasons for breast malignancy screening ($r = 0.250^{**}$; p-value = 0.00).

➤ Conclusion:

Government should prioritize compulsory free screening initiatives for early detection of breast malignancy in women to avert the mental agony of loss of lives.

Keywords:- Breast Cancer, Mammography, Perception, Malignancy.

I. INTRODUCTION

The increasing mortality from breast malignancy (cancer) is becoming an intractable global health burden with devastating effects on the families and communities of those affected. Breast malignancy is a disease resulting from uncontrollable abnormal growth of the breast cells to form tumors. The abnormal growth develops inside the lobules and the milk ducts that produce milk in the breast. These tumors, if detected in late stages, can spread to the nearby breast tissues and become life threatening. The Sub-Saharan Africa has the highest age-standardized incidence rate of 17.3 per 100,000 women per year, globally; with the Southern Africa region and West African region having the highest age-standardized incidence rate of 38.9 and 38.6 per 100,000 women per year in sub-Saharan Africa, respectively.¹ The burden of breast cancer (BC) is rising in Nigeria. The International Agency Research on Cancer (IARC) recorded 28,380 new BC cases in Nigeria in 2020, representing 22.7% of new cancers and accounting for the highest proportion of all cancer types.²

Carcinoma of the breast is a condition that is peculiar in women and it is a very rare malignancy in men.³ In a woman's lifetime, there is a one in nine chance that she will be diagnosed with a malignant breast disorder before menopause and a one in eight chance after menopause.⁴ Breast malignancy develops through a multistep process the pathogenesis of which is not yet known. Although incidence rates were highest in developed regions, the countries in Asia and Africa shared 63% of the total deaths in 2020.⁵ The awareness of a lump, either benign or malignant at the initial stage, usually result in severe emotional distress with shock, fear, denial and depressive manifestations. These reactions are expected bearing in mind the stigma, myths and misconceptions that cancer is synonymous with death sentence in most developed countries. Despite the marginal

variations in prevalence of the disease among countries, it remains a significant economic and psychological burden around the world. The World Health Organization (WHO) has developed a global breast cancer initiative framework with the goal of saving nearly three million lives from breast cancer by 2040. This framework focuses on health promotion for early detection, timely diagnosis, and proper management of breast cancer cases.⁶ The incidence of breast cancer is increasing in the developing countries and this is due to the increase in life expectancy, urbanization and adoption of western lifestyles.⁷ Most women with cancer of the breast usually present at the advance stage to the hospital which is why the mortality rate has been on the increase. The increase is partly due to lack of knowledge pertaining to the risks factors and clinical manifestations such as breast lumps, increase in the size of the breast, breast ulceration and early detection methods.⁸ The survival rate for women with breast cancer depends heavily on early detection.⁹ Despite the availability of screening options and considerable efforts to communicate this message to women through various means, yet most women in urban areas seem not to realize the place of early screening as a tool to reduce the increasing mortality from the disease.

➤ *Perception of Breast Cancer Screening*

Perception towards breast cancer and screening methods is a crucial determinant of early detection.¹⁰ Perception is a process emanating from sense to action. This involves processing information in a particular way in layers so that a mental model is built to recognize the surrounding world thereby generating a pattern from the environment. Perception and adoption of screening methods for breast cancer especially mammography remains poor as indicated in many studies.

➤ *Breast Malignancy Risk Factors*

Anything that increases the probability of developing cancer is a predisposing or a risk factor. Risk factors may predict the development of cancer; however they may not directly lead to cancer. Although the exact etiology of breast malignancy remains unknown, yet the strongest predisposing factor remains being a female. Research¹¹ have also revealed several risk factors that can increase the risk of developing breast malignancy as highlighted below:

➤ *Previous History of Breast Cancer*

An increased risk of breast cancer recurrence exists in women who have previously experienced it. The second breast cancer may appear in the same breast as the first one or in a different breast¹¹

➤ *Presence of other Types of Cancer in the Family*

The presence of breast cancer in one or more close blood relatives indicates that the disease runs in the family. More breast cancer cases than one might anticipate randomly occur in some families. It can be difficult to determine whether a family's history of cancer is the result of coincidence, a common lifestyle, genes passed down from parents to children, or a combination of these factors.¹¹

➤ *Mutations in the BRCA Gene*

An altered gene is referred to as a genetic mutation. Certain types of cancer may be more likely to develop as a result of some gene changes. A mutated BRCA gene can be inherited by both men and women from either their mother or father. Children of those who carry the gene mutation may also inherit it. A child has a 50% chance of inheriting the gene mutation if 1 of the 2 copies of the *BRCA* gene has the mutation in 1 or both parents. A child also has a 50% chance of not inheriting the gene mutation, according to this.¹¹

➤ *Large Breasts*

Compared to fatty tissue, dense breasts have more milk ducts, glands, and connective tissue. Breast density is a genetic trait. Compared to women with little or no dense breast tissue, women with dense breast tissue have a higher risk of developing breast cancer.¹¹

➤ *The Late Menopause*

The body's level of hormones, primarily estrogen and progesterone, begins to decline as the ovaries stop producing them, resulting in menopause. A woman's menstrual cycle is stopped as a result of this. Your cells are exposed to estrogen and other hormones for a longer period if you enter menopause later in life (after age 55). This raises the possibility of breast cancer. Likewise, breast tissue is exposed to estrogen and other hormones for a shorter period when menopause occurs earlier in life. A lower risk of breast cancer is associated with early menopause¹¹

➤ *Late Pregnancy or No Pregnancies*

Breast cells' exposure to circulating estrogen is halted during pregnancy. It also reduces the overall number of menstrual cycles a woman experiences throughout her lifetime. A woman's risk of breast cancer is marginally higher than it is for a woman who has at least one full-term pregnancy before the age of 30. Reduced risk of breast cancer is associated with early pregnancy. A woman is more protected from breast cancer the more children she has. Breast cancer risk is increased if a woman never conceives.¹¹

➤ *Hormonal Replacement Treatment (HRT)*

According to the Women's Health Initiative (WHI) study, estrogen alone increased breast cancer risk by about 1% per year and combined hormone replacement therapy (HRT) increased risk by about 8% per year. The study also discovered that, in comparison to a placebo, the risk increased even with relatively brief use of combined HRT. After stopping HRT for a few years, the higher risk seems to be gone. The risks associated with the long-term use of combined HRT are now thought to outweigh the advantages.¹¹

➤ *Being Overweight*

In post-menopausal women, obesity increases the risk of developing breast cancer. According to studies, women with a body mass index of 31.1 or higher who have never used HRT are 2.5 times more likely to develop breast cancer than those with a body mass index of 22.6 or lower. A

higher estrogen level can result from having more fat tissue, which raises the risk of breast cancer.¹¹

➤ *Estrogen*

Breast cancer risk is linked to estrogens, both endogenous and exogenous. In premenopausal women, the ovary typically produces endogenous estrogen, and ovarian removal can lower the risk of breast cancer. HRT and oral contraceptives are the main exogenous estrogen sources. Since the 1960s, oral contraceptives have been extensively used, and their formulations have been improved to minimize side effects.¹¹

➤ *Clinical Manifestations*

Breast malignancy in most cases may not show symptoms during the initial phase. However the symptoms may include:

- Painless breast lump
- Swelling of the breast
- Thickening of the breast
- Changes in size, shape or appearance of the breast
- Other changes in the skin like dimpling, redness, pitting
- Changes in the appearance of the nipple or the areola surrounding the nipple
- Nipple discharge (blood or fluid)

➤ *Cancer Screening Methods*

Screening refers to procedures and examinations used to find the probability of the presence or absence of a suspected condition in people who don't have any symptoms while early detection means finding and diagnosing a disease earlier than when symptoms appear.¹² Screening procedures for breast malignancy are to find it before it causes symptoms (like a lump that can be felt).¹² Breast cancer is usually self-detected through symptoms like pain or a palpable mass that prompts the carrying out of a diagnostic investigation.

➤ *Breast Self- Examination (BSE)*

This is a simple, relatively cheap and convenient screening method which is used to detect early breast malignancy at the early stage. This involves the woman looking at and feeling for any change in her breast by herself regularly. When this is performed regularly, it affords women to better notice any changes in their breasts or detect when something feels different especially a lump. Other methods like mammography and Magnetic Resonance Imaging, may not be the appropriate methods of screening in developing countries because of the cost implication. Hence, it is advocated that an ideal breast cancer test should be simple and inexpensive. Most healthcare providers opined that while mammograms are the best screening tool to detect breast malignancy, a breast examination done by the woman herself is the best way to be familiar with their own breasts. However, breast self-examination should be done by women above the age of 20 years while the health care workers should endeavor to give educate on the guidelines, technique and the timing.

➤ *Clinical Breast Examination (CBE)*

Breast exams may be performed by many clinicians including nurses. However, it is important to understand that current guidelines do not recommend regular clinical breast exams for cancer screening for women in any risk group. However, the women should be educated on the importance of changes to the typical appearance and texture of their breasts and report any changes to their doctor right away.¹³

➤ *Mammography*

Mammograms are low-dose breast x-rays taken to visualize a breast lump in the developing stage. According to the review¹⁴, of all the screening methods for breast cancer, the mammography is proven to be the most effective. Screening for cancer of the breast with mammography aims at detecting breast cancer at an early, curable stage.¹⁵ Screening mammography leads to overall reduction in breast malignancy mortality and more beneficial for women in their 60s. As a result, screening mammography is recommended by the American Cancer Society beginning at age 45 or above. The negative effects of screening with mammography may include false positive reading, radiation exposure, anxiety, and other undesirable psychological effects.

➤ *Magnetic Resonance Imaging*

A breast MRI uses magnets and radio waves to take pictures of the breast. Breast MRI is used along with mammograms to screen women who are at high risk for getting breast cancer. Because breast MRIs may appear abnormal even when there is no cancer, they are not used for women at average risk.¹⁶

➤ *Biopsy*

A biopsy is the most accurate confirmatory test of breast malignancy. It is an invasive procedure which involves removing cells or tissue from the diseased breast to check for cancer. Early detection of breast cancer gives the best possible chance of survival. The earlier an abnormality is detected, the greater the number of effective treatment options available. This ensures the best possible outcome.¹⁷

➤ *Barriers of Breast Cancer Screening*

For effective treatment and long term survival of breast cancer, the impact of adopting a detection method by every woman in the reproductive age cannot be over emphasized. Breast screening of various means has been advocated as a potentially very important factor in the early diagnosis of breast cancer.¹⁸ Therefore; women should start being breast aware by the early reproductive age (18 years). This should be continued as regular breast checks throughout the year to enable familiarity with their breasts. However, in doing this, there are several barriers that limited women. Barriers to all cancer screening remain the same, be it cervical or breast cancer screening. Studies¹⁹ have shown that the barriers to cancer screening includes: lack of awareness about the screening, lack of availability of test, test too expensive, fear of the procedure, discouragement by spouse, indecision about test, pain of the procedure, belief of not being at risk of breast cancer and fear of being diagnosed of cancer.

➤ *Justification*

In the past few decades, the incidence of breast malignancy in women has been on the increase with decreasing survivors in most developing countries. Currently, breast cancer accounts for about 60 percent of majority of malignant cases in Nigeria, in regard to about 80 percent of women in Nigeria, being diagnosed with end-stage cancer.²⁰ In Nigeria, the predicted year of survival rate for cancer of the breast which is five years continues to be less than 10 percent, as opposed to West part of Europe and Northern America, which records close to 80 percent rate of survival.²⁰ Early diagnosis, screening and treatment programs are part of the interventions that could reduce the high mortality rate from breast cancer globally. This study therefore evaluates the perception and adoption of methods of screening for breast malignancy among women in urban areas of Ondo State in order to increase the incidence of survivors from breast malignancy.

➤ *Objective*

The main purpose of this study is to investigate perception and adoption of methods of screening for breast malignancy among urban women in Ondo State, Southwest, Nigeria.

➤ *Hypotheses*

- Ho₁: There is no significant relationship between socio-demographic characteristics and the adoption of methods of breast malignancy screening among women in urban areas of Ondo State, Nigeria.
- Ho₂: There is no significant relationship between perception and adoption of methods of breast malignancy screening among women in urban areas of Ondo State, Nigeria

➤ *Significance of the Study*

Findings from this study will be used by the health care team to institutionalize interventions on improving perception and adoption of breast malignancy screening among women. Findings will also be used in planning educational programs and designing guidelines and policies in training nurses, doctors and other health personnel who are involved in promoting an optimal health among women. This study will also serve as empirical data for further studies on breast malignancy.

➤ *Delimitation of the Study*

This study focuses on women of child bearing age in urban areas of Owo Local Government, Ondo State, Nigeria irrespective of their age, religious affiliation, educational status, tribe and socio-economic status. It is assumed that most urban women are more exposed to intervention messages and will be able to educate women in the suburb on adoption of appropriate methods of breast malignancy screening.

➤ *Theoretical Frame Work*

Health belief model (HBM) was adapted for this study. HBM is a psychological health behavior change model that explains and predicts health-related behaviors, particularly

in regard to the uptake of preventive health service. The health belief model suggests that people's beliefs about susceptibility to health problems, severity of the illness, perceived benefits of action, cues to action and self-efficacy explain engagement (or lack engagement) in health-promoting behavior influences their health actions.

➤ *Application of the Theory to the Study*

The attitudes towards breast screening and self-breast examination and other health practices can be explained by the health belief model. This model was developed to explain why people may or may not be involved actively in health preventive practices such as the breast screening programs.

II. METHODS AND MATERIALS

➤ *Study Design*

This study utilized a cross-sectional survey design. This design was adopted as the researcher was only interested in the phenomenon of interest.

➤ *Setting*

The study was conducted in Owo Local Government, Ondo State. Owo Local Government Area (LGA) is one of the eighteen (18) LGAs in Ondo State. Owo is an urban metropolitan city situated halfway between the towns of Akure and Benin City. The population of Owo LGA in 2006 was put at 222,262 (NPC, 2006). It is located in the Ondo Northern Senatorial district. There are two major higher institutions in Owo: Achievers University and Rufus Giwa Polytechnic and numerous secondary schools and a technical college. The local government is also the seat for Federal Medical Centre, Owo, Ondo state. The major occupation in the local government is farming and timber collection, block making industries, trading and other business activities.

➤ *Population*

This study population comprises of women in their reproductive age (15-49 years) in Owo Local Government Area, Ondo state, Nigeria.

➤ *Sampling Procedures*

Multistage sampling technique was used to select participants for the study. The first stage involves using simple random sampling to select Ondo state out of the Six Southwestern States in Nigeria. The second stage involves selecting Owo Local Government Area out of the 18 LGAs in Ondo State through simple random technique. Owo Township which is the headquarters of the LGA was randomly selected above other towns being an urban metropolitan city in the third stage. Convenient sampling method was used to select 427 participants in the four quarters where the research was conducted. The sample size was determined through Cochran's formula as follows;

$$n = \frac{z^2pq}{e^2}$$

Where; n= desired sample size

z = Z score

p= standard of deviation

q=1-p

e = level of precision put at 0.05

$$\text{thus; } n = \frac{(1.96)^2 (0.5)(0.5)}{(0.05)^2}$$

$$n = \frac{0.9604}{0.0025}$$

$$n = 384.16$$

$$n = 384 \text{ respondents}$$

Attrition rate of 10% was added and calculated thus;

$$\frac{\text{previous sample size} \times \text{attrition rate}}{\text{attrition rate} - 1}$$

$$\text{Therefore, } n = \frac{384 \times 10}{10 - 1}$$

$$n = \frac{3840}{9}$$

$$n = 426.6667$$

$$n = 427 \text{ respondents}$$

➤ Research Instrument

A semi-structured questionnaire tagged “Perception and adoption of methods of breast malignancy screening among urban women” (PAMBMSUW) was segmented into five sections data collection. Section A consists of socio-demographic data, section B; knowledge of risk factors of breast malignancy; section C: awareness of methods of breast malignancy screening; section D: perception of breast malignancy screening and section E: adoption of breast malignancy screening methods.

➤ Validity of Instrument

The questionnaire was reviewed by an Oncologist at the Federal Medical Center (FMC), Owo and Public Health experts to ensure constituency and validity. The research

instrument was scrutinized and corrected in line with the stated study objectives.

➤ Reliability of the Instrument

To ensure reliability, a piloted study was carried out among 43 respondents (equivalent to 10% of the population) in Emure-Ile in Owo LGA (outside the research setting). It was analyzed using a test-retest method and the reliability coefficient of 0.75 was obtained.

➤ Method of Data Collection

To ensure data quality, data administration was closely overseen for completeness in the four major quarters in Owo: Ijebu- Owo, Okedogbon, Oke Ogun and Idasen respectively. Convenient sampling method was used to administer the questionnaire till the sample size of 427 was obtained. Thereafter it was retrieved from each respondent.

➤ Duration

The study was community based and conducted between January to April, 2024 in Owo Local Government Area of Ondo State.

➤ Method of Analysis

Descriptive statistics was used to examine the general distribution of respondents as contained in each variable. Inferential statistics was also used to test for the hypotheses and relationship between variables using Chi-square and correlation analytical methods.

➤ Ethical Consideration

This study was a community based survey. Consent was obtained from community leaders of the study settings and the ethical and research committee of Owo Local Government Area, Ondo State. Verbal informed consent was also obtained from each respondent.

➤ Inclusion Criteria

- Women between the ages of 15-49years
- Willingness to participate in the study

➤ Exclusion Criteria

- Women not consenting to participate
- Women less than 18 years and above 49 years of age

➤ Statistical Analysis

Table 1 Distribution of Socio-Demographic and Obstetric Characteristics of the Respondents

Variables	Frequency (F)	Percentage (%)	
Age			
Older Youth (0-34years)	154	36.1	
Young Adult (>35years)	273	63.9	
Total	427	100.0	Mean age = 38.0
Religion			
Christianity	315	73.8	
Muslim	112	26.2	
Total	427	100.0	

Marital Status		
Single	53	12.4
Married	285	66.7
Divorcee	48	11.2
Widow	41	9.6
Total	427	100.0
Ethnicity		
Igbo	108	25.3
Hausa	36	8.4
Yoruba	255	59.7
Others	28	6.6
Total	427	100.0
Occupation		
Artisan	152	35.6
Trader	83	19.4
Civil servant	165	38.6
Farmer	27	6.3
Total	427	100.0
Educational qualification		
No formal education	24	5.6
Primary education	80	18.7
Secondary education	257	60.2
Tertiary education	66	15.5
Total	427	100.0
Parity (Number of children)		
One	105	24.6
Two	192	45.0
Three	82	19.2
More than three	48	11.2
Total	427	100.0

Table 2 Distribution of Respondents on Knowledge of Risk Factors of Breast Malignancy

Risk factors of breast malignancy	Correct Response		Incorrect Response	
	F	%	F	%
Age (Adult)	389	91.1	38	8.9
Family history	387	90.6	40	9.4
Eating fatty diet	292	68.4	135	31.6
Alcohol consumption	314	73.5	113	26.5
Obesity	407	95.3	20	4.7
Use of family planning pills	258	60.4	169	39.6
Early menarche/late menopause	315	73.8	112	26.2
Not breastfeeding	319	74.7	108	25.3
Smoking	293	68.6	134	31.4

Table 3 Knowledge Grade of Risk Factors of Breast Malignancy among the Respondents

Knowledge Grade	Frequency (f)	Percentage (%)
Poor Knowledge (0-39.0%)	16	3.7
Fair Knowledge (40.0-59.0%)	168	39.3
Good Knowledge (60-100%)	243	56.9
Total	427	100.0

Table 4 Awareness of Breast Malignancy Screening Distribution

Variable	Frequency (F)	Percentage (%)
Awareness of breast cancer screening		
No	41	9.6
Yes	386	90.4
Total	427	100.0
Source of awareness		

Nil	41	9.6
Health workers	82	19.2
TV/Radio	49	11.5
Family/friends	225	52.7
Social media	30	7.0
Total	427	100.0

Table 5 Knowledge Distribution of Breast Malignancy Screening among Respondents

Knowledge of breast cancer screening	Correct Response		Incorrect Response	
	F	%	F	%
Early detection of breast cancer through mammography helps in the treatment of breast cancer	343	80.3	84	19.7
Mammography is done every year	332	77.8	95	22.2
There is no age limit to mammography	330	77.3	97	22.7
Knowledge grade	F		%	
Poor Knowledge (0-39.0%)	16		3.7	
Fair Knowledge (40.0-59.0%)	136		31.9	
Good Knowledge (60-100%)	275		64.4	
Total	427		100.0	

Table 6 Responses to Perception of Breast Malignancy Screening

Perception statement	SA	A	U	D	SD
I don't need mammography because I am not breastfeeding	84(19.7)	36(8.4)	59(13.8)	107(25.1)	141(33.0)
My culture forbids women undergoing such test	31(7.3)	31(7.3)	50(11.7)	95(22.2)	220(51.5)
Regular breast cancer screening can prevent development of breast cancer	370(86.7)	---	7(1.6)	10(2.3)	18(4.2)
Cancer has no cure therefore the screening is not necessary	14(3.3)	8(1.9)	7(1.6)	16(3.7)	382(89.5)
I don't have time to get a screening because it takes much time	30(7.0)	26(6.1)	20(4.7)	50(11.7)	301(70.5)
Mammography is too costly	299(70.0)	29(6.8)	24(5.6)	36(8.4)	39(9.1)
I am scared of being diagnosed of cancer through mammography	138(32.3)	37(8.7)	----	----	252(59.0)

Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D), Strongly Disagree (SD)

Table 7 Perception Score of Breast Malignancy Screening by Respondents

Perception score	Frequency (F)	Percentage (%)
Negative	42	9.8
Positive	385	90.2
Total	427	100.0

Table 8 Percentage Distribution of Respondents by Adoption of Breast Malignancy Screening

Variable	Frequency (F)	Percentage (%)
Have you done breast cancer screening before		
No	107	25.1
Yes	320	74.9
Total	427	100.0
If yes, where was it done (n=320)		
Government hospital	16	5.0
During health outreach	9	2.8
At home	265	82.8
Private clinic	30	9.4
Total	320	100.0
If yes, which type of screening have you done		
Self-breast examination	265	82.8
Mammography	45	14.1
Breast magnetic resonance image	10	3.1
Total	320	100.0

Reasons breast cancer screening was done		
Routine breast self-examination at home	247	77.2
Instruction by health workers	51	16
Complaint of painful breast	22	6.8
Total	320	100.0
If no to question 1, reasons screening was not done		
I am not aware	24	22.4
No time for it	27	25.2
Fear of embarrassment if cancer is detected	14	13.1
I can't afford it	12	11.2
My religion forbids it	11	10.3
No reason	19	17.8
Total	107	100.0
Will you recommend breast cancer screening to friends		
No	125	29.3
Yes	302	70.7
Total	427	100.0

Table 9 Summary of Adoption of Methods of Breast Malignancy Screening among Respondents

Preventive practice grade	Frequency (F)	Percentage (%)
Poor Practice	107	25.1
Good Practice	320	74.9
Total	427	100.0

Table 10 Chi-Square analysis on the Relationship between Socio-Demographic Characteristics and Adoption of Methods of Breast Malignancy Screening

Variables	Practice of BST cancer screening				Total		Df	X ²	P-value
	Yes		No						
	F	%	F	%	F	%			
Age									
Older youth	116	27.2	38	8.9	154	36.1	1	0.01	0.89 ^{ns}
Young adult	204	47.8	69	16.2	273	63.9			
Total	320	74.9	107	25.1	427	100.0			
Occupation									
Artisan	117	27.4	35	8.2	152	35.6	3	8.02	0.04*
Trader	64	15.0	19	4.4	83	19.4			
Civil servant	114	26.7	51	11.9	165	38.6			
Farmer	25	5.9	2	0.5	27	6.3			
Total	320	74.9	107	25.1	427	100.0			
Educational qualification									
No formal	16	3.7	8	1.9	24	5.6	3	31.9	0.00*
Primary	42	9.8	38	8.9	80	18.7			
Secondary	214	50.1	43	10.1	257	60.2			
Tertiary	48	11.2	18	4.2	66	15.5			
Total	320	74.9	107	25.1	427	100.0			

*Significant at $\alpha = 0.05$

Table 11 Correlation Analysis between Perception and Adoption of Breast Malignancy Screening among Respondents

Variable		PEP	E1	E2	E3	E4	E5
Perception of BST screening (PEP)	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	427					
Utilization of BST screening before (E1)	Pearson Correlation	-.004	1				
	Sig. (2-tailed)	.936					
	N	427	427				
Place BST screening was done (E2)	Pearson Correlation	.370**	.661**	1			
	Sig. (2-tailed)	.000	.000				

	N	427	427	427			
BST screening method used (E3)	Pearson Correlation	.218**	.786**	.727**	1		
	Sig. (2-tailed)	.000	.000	.000			
	N	427	427	427	427		
Reason BST screening was done (E4)	Pearson Correlation	.250**	.741**	.683**	.493**	1	
	Sig. (2-tailed)	.000	.000	.000	.000		
	N	427	427	427	427	427	
Reason for not doing BST screening (E5)	Pearson Correlation	-.072	-.851**	-.563**	-.669**	-.631**	1
	Sig. (2-tailed)	.136	.000	.000	.000	.000	
	N	427	427	427	427	427	427

** . Correlation is Significant at the 0.01 level (2-tailed).

III. RESULTS

➤ Socio-Demographic and Obstetric Characteristics

Socio-demographic and obstetric characteristics of the women of childbearing age was presented in Table 1. The result showed that more than half (63.9%) of the women were young adult, 36.1% of the women were older adult while the mean age of the participants stood at 38. More than half (73.8%) of the women were Christians and 26.2% of them were Muslim. Majority (66.7%) of the women were married and (59.7%) of the women were Yoruba by tribe. The result of occupation showed that (35.6%) of the women were Artisans, 38.6% of them were civil servants, 19.4% of them were traders while 6.3% were farmers. Also, more than half (60.2%) of the women had secondary education, 18.7% of the women had primary education, 15.5% of them had tertiary education while few (5.6%) of them had no formal education. The parity of the women also showed that 24.6% are pimpliparous while 75.4 are multiparous women.

➤ Knowledge of Risk Factors of Breast Malignancy

Knowledge of risk factors of breast cancer was presented in Table 2. Majority (91.1 & 90.6%) of the women gave a correct response that age and family history are risk factors of breast cancer. More than half (68.4% & 73.5%) of the women gave correct responses that eating fatty diet and alcohol consumption are risk factors of breast cancer while 31.6% and 26.5% of the women gave incorrect response towards the aforementioned knowledge questions. Majority (95.3%) of the women gave correct response that obesity is a risk factor of breast cancer.

➤ Knowledge Grade of Risk Factors of Breast Malignancy

Knowledge grade of risk factors of breast malignancy among the childbearing age was presented in Table 3. More than half (56.9%) of the women had good knowledge, 39.3% of the women had fair knowledge and few (3.7%) of the women had poor knowledge of risk factors of breast cancer.

➤ Awareness of Breast Malignancy Screening

Awareness of breast cancer screening among the women of childbearing age was presented in table 4. The table showed that majority (90.4%) of the women were aware of breast cancer screening while few (9.6%) of the women were not aware of breast cancer screening, more than half (52.7%) got to know about breast cancer screening from family/friends, 11.5% of them got their awareness

from TV/Radio, 19.2% got theirs from health workers and few (7.0%) got their awareness from social media.

➤ Perception of Breast Malignancy Screening

Perception of breast cancer screening among women was presented in Table 5. The table showed that 19.7% of the women strongly agree that they don't need mammography because they are not breastfeeding. Majority (86.7%) of the women strongly agree that regular breast screening can prevent development of breast cancer and while few (3.3%) of the women strongly agreed that cancer has no cure and therefore screening is not necessary. More than half (70.0%) of the women strongly agreed that mammography is expensive while (32.3%) expressed the fear of being diagnosed through mammography respectively.

Perception score of breast cancer screening among women of childbearing age was presented in Table 6. Majority (90.2%) of the women had positive perception towards breast cancer screening and few (9.8%) of the women had negative perception towards breast cancer screening.

➤ Adoption of Breast Cancer Screening Methods

Adoption of breast cancer screening methods among women of childbearing age was presented in Table 7 More than half 74.9% of the women claimed they had done breast cancer screening before and 25.1% of the women have not. A few of them (5.0%) did their breast cancer screening at government hospital while 9.4% of them did it at private clinics. Majority of the women (82.8%) who did breast cancer screening utilized Breast Self-Examination (BSE) method while 14.1% of them utilized mammography for their screening. On the indication for the screening, 77.2% of the women claimed that they performed breast cancer screening as routine check-up by themselves, 16.0% did it on the instruction of the health worker while 6.8% did it due to breast complaints. The table revealed that 22.4% of the women did not do breast cancer screening due to lack of awareness, 25.2% due to lack of time, 13.1% due to fear of embarrassment if cancer is detected, while 11.2% was due to lack of affordability. Also majority (94.2%) of women claimed that they can recommend breast cancer to their friends.

Grading of practice of breast cancer screening among women of childbearing age was presented in Table 8. The table showed that more than half (74.9%) of the women had good practice of breast cancer screening while 25.1% of the women had poor practice of breast cancer screening.

➤ Testing of Hypothesis

• Table 9: Chi-Square Analysis on the Relationship between Socio-Demographic Characteristics and Adoption of Breast Malignancy Screening Methods

Table 9 above showed that there is significant relationship ($p < 0.05$) between socio-demographic characteristics and adoption of breast cancer screening among women of childbearing age. The table showed that there is a statistically significant relationship between occupation and practice of breast cancer screening with the values ($P\text{-value} = 0.04^*$; $X^2 = 8.02$) and educational qualification with the values ($P\text{-value} = 0.000^*$; $X^2 = 31.9$). This result shows that the alternative hypotheses was accepted and the null hypotheses “that there is no significant ($P > 0.05$) relationship between socio-demographic characteristics and practice of breast cancer screening was rejected.

• Table 10: Correlation Analysis between Perception and Adoption of Breast Cancer Screening Methods among Respondents

Table 10 shows the correlation between perception and practice of breast cancer screening among women of childbearing age. The result showed that there is a positive weak correlation between perception of breast cancer screening and the place breast cancer screening was done with the values ($r = 0.37^{**}$; $p\text{-value} = 0.00$). The result also showed that there is positive weak correlation between perception of breast cancer screening and breast cancer screening method used by the respondents ($r = 0.218^{**}$; $p\text{-value} = 0.00$) and reasons breast cancer screening was done ($r = 0.250^{**}$; $p\text{-value} = 0.00$).

IV. DISCUSSION

Finding from this study revealed that the respondents have positive perception (90.2%) about breast malignancy screening and the perception that breast cancer screening can prevent breast cancer disease was also high (86.7%). Likewise, the practice of breast cancer screening among women of child bearing age in Southwest Nigeria is also good (74.9%). Incidentally, out of those who practice breast cancer screening, majority (82.2%) utilized Breast Self-examination (BSE) method while only (14.1%) utilized mammography with majority (70.0%) perceiving that the method is too costly. This finding is in contrast with the result of a study²¹ conducted on breast cancer knowledge, perception and breast self-examination practices among Yemeni Women. The study concluded that poor knowledge and inadequate BSE practices are prevailing in Yemen and the need for implementing culturally sensitive targeted education measures is mandatory in the effort to improve early detection and reduce the burden of breast cancer.

Findings from our study also revealed that awareness of breast cancer screening among women of child bearing age in urban areas of Southwest, Nigeria is high (90.4%). This is in tandem with a study²² carried out on Knowledge, Awareness, and Practices of Breast Cancer in Belagavi. The study was conducted among 20–70 years aged females without any history of breast cancer from rural and urban areas of Belagavi. The result revealed that awareness of breast cancer was five-folds higher in urban than in rural areas. It was concluded that women from urban areas of Belagavi have a fair knowledge and awareness about breast cancer and are also fairly well versed with BSE technique. Our study also revealed that obesity (95.3%) and age (91.1%) are mostly the risk factors of breast cancer while family/friends (52.7%) remains the potent source of awareness of breast cancer screening. This indicates that health care workers are not giving adequate information and education on cancer screening to the women. Our findings disagree with the findings in a study⁷ on the Knowledge and practices on breast cancer detection and associated challenges among women aged 35 years and above in Tanzania using a total population of 130 women in which the most frequently reported cause and risk factor of breast cancer were putting money under brassiere (30.8%) and fat diet (17.7%) respectively and the frequently reported source of information about this disease was television/radio programs (83.1%). Our findings from this study further established a significant association between occupation and practice of breast cancer screening with the values ($P\text{-value} = 0.04^*$; $X^2 = 8.02$) and educational qualification with the values ($P\text{-value} = 0.000^*$; $X^2 = 31.9$). This must have resulted from the fact that majority of the women are educated above high school colleges and are mostly civil servants bearing in mind that education improves knowledge which can influence a change in perception leading to good preventive screening practices against breast cancer.

Findings also indicated that there is a positive weak correlation between perception of breast cancer screening and the place where breast cancer screening was done with the values ($r = 0.37^{**}$; $p\text{-value} = 0.00$). The result also showed that there is positive weak correlation between perception of breast cancer screening and breast cancer screening method used by the respondents ($r = 0.218^{**}$; $p\text{-value} = 0.00$) and reasons breast cancer screening was done ($r = 0.250^{**}$; $p\text{-value} = 0.00$). Lack of time, cost and fear of being diagnosed were also reported as barriers to screening. The study showed that affordability and the longer time spent for mammography screening must have resulted in the high number of practice of breast self - examination which is cost effective and does not require longer waiting time during hospital visit.

V. CONCLUSION

Breast cancer has become a pressing public health concern as it has assumed the commonest malignancy in women in recent times in Nigeria. However, this study has shown that most urban women in the study area were well informed on pertinent issues relating to the risk factors of breast cancer and breast cancer screening methods.

However, the role of health workers and mass media in sensitization and mass education on breast cancer early detection methods particularly BSE Nigeria is expedient. This is in realization of the facts that mammography can be impracticable in most developing countries especially in Sub-Sahara. This will improve the chances of survival and reduce the cost of invasive procedures.

RECOMMENDATIONS

A health education program targeting women of child bearing age should be intensified by the health care workers who according to this study seem not to be actively recommending breast cancer screening enough while the government should make policies to reduce the cost of mammography screening. Improving the practice of breast cancer screening can be achieved through increased awareness campaigns, the provision of breast examination services in more health facilities to improve breast cancer prevention.

LIMITATIONS

- This study was limited to four political quarters within Owo Local Government Area of Ondo because of budgetary limitations related to transportation and logistical considerations, which prevented us from including a broader population.
- The reason for not utilizing online web surveys could be attributed to access to poor internet resources and erratic electricity supply in the study location.
- **Conflicts of interest:** There are no conflicts of interest.
- **Funding:** The researchers funded this study by themselves

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