

# Knowledge, Attitude and Practice of Breast Self-Examination Among Women Attending Infant Welfare Clinic in Primary Healthcare Facilities, Ikenne Local Government Area, Ogun State, Nigeria

Running title: Breast Self-Examination Knowledge, Attitude and Practice in Ogun State, Nigeria

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## Abstracts

**Background:** Breast cancer is a significant public health concern worldwide. Early detection of breast cancer (BC) is crucial for effective treatment and improved survival rates. Breast self-examination (BSE) is an easy and efficient means for early detection of breast lumps that lead to BC. This study assessed the knowledge, attitude and practice of breast self-examination among women in Ikenne Local Government Area, Ogun State.

**Method:** A descriptive cross-sectional design was adopted for this study in which a simple random sampling technique was used to recruit 213 women from the settings. A self-administered questionnaire was used for data collection. The Cronbach's Alpha coefficient of the instrument was 0.966. Descriptive statistics were used to collect the data. Pearson product-moment correlation (PPMC) and chi-square were used to test the hypothesis at a 0.05 significance level.

**Findings:** Findings from the study revealed mean age (30 years  $\pm$  0.85, with secondary school as the highest educational level (123, 57.7%). Majority (52.1%) and (69%) of the participants had average knowledge and positive attitudes towards breast self-examination, respectively, while majority of the participants (69%) had poor practices of breast self-examination. The study further revealed a positive significant relationship between knowledge and attitude of women towards breast self-examination ( $p=0.000$ ), positive significant relationship between practice and attitude of women towards breast self-examination ( $p=0.000$ ), positive significant relationship between practice and knowledge of women towards breast self-examination ( $p=0.000$ ), and a negative significant association between the level of education and practice of breast self-examination with a  $p$ -value of  $0.000 < 0.05$  ( $df=60$ ,  $r=-0.305$   $X^2=272.596$ ).

**Conclusion:** The women had average knowledge and a positive attitude towards BSE but had poor practice of BSE. Educational interventions to improve BSE knowledge and practice among this population are necessary, and also for the female adolescents in secondary schools as is noted that most of the women had secondary school education.

**Keywords:** Attitude, Breast Self-Examination, Knowledge, Practice, Women

## Introduction

Breast self-examination is an easy and efficient means for early detection of breast lumps that lead to breast cancer. Even though cancer of any organ of the body is insidious, some can be detected early through various methods while some can be completely prevented such as cervical cancer which can be prevented through vaccination. Breast cancer is among the category of cancers that can be detected early, and breast self-examination is one of the screening methods that can be used to detect it. Breast cancer is the most common cancer among women, and it is also the second most common malignancy in the world (1). From the year 2008 to the year 2012, the incidence rate of breast cancer had an increase of greater than 20%, and the mortality rate had an increase of 14% (2).

The International Agency for Research and Cancer, which is an agency of the World Health Organization (WHO) carried out a study and found that in 2018, 2.1 million women globally were diagnosed with breast cancer for the first time in their lives (1). Two out of ten women who are newly diagnosed with breast cancer in healthcare facilities that have high resources die, while seven out of ten women diagnosed in healthcare facilities with low resources die (2). According to the (3), “627,000 women died from breast cancer – that is approximately 15% of all cancer deaths among women”. The rate of women being diagnosed with breast cancer is on the increase in almost all regions of the world (3) and also in many regions of Africa (2).

According to (4), mammography, clinical breast examination (CBE) or physical examination by a qualified health worker and breast self-examination (BSE) are the acknowledged procedures used in the early diagnosis of masses in the breast. In selected cases ultrasound and Magnetic Resonance Imaging (MRI) can also be done (5). Breast cancer can be treated with minimal resources if it is identified at the early stage when complications and disabilities have not yet developed as treating it in the late stage is costly and prognosis is usually poor (2). In the National Breast Cancer Screening Program of technologically advanced and developed nations, every woman from the age of 20 and above would carry out a clinical breast examination alongside a mammogram at 2 years interval as well as consultations about breast self-examination to these women to increase their awareness (1).

According to (6), breast cancer ranked the number one cancer leading to mortality with 25.8% (124,179 individuals affected, cumulative risk of 3.69, total death was 55,938, which is 10.5%). In Nigeria, breast cancer was ranked the most prevalent cancer, with a total number of 26,310 (37%) new cases, cumulative risk of 4.33, death numbered 11,564 (16.4%) and documented a 5-year prevalence including all ages to be 52, 562. However, Ogun state has no published data for reference, but statistics from Babcock University Teaching Hospital (BUTH, female surgical Ward record), shows that as at the year 2021, there were 52 patients with breast cancer (who were consistent for treatment) and as at September 2022, 40 patients with breast cancer has been on treatment for breast cancer (35 are still alive).

In Nigeria where resources are limited, the use of mammography as the main screening test for the early detection of breast cancer is not feasible, due to how expensive it is to conduct a mammogram and also mammography is not readily available (7). These factors make breast self-examination the most suitable method for the early detection of breast lumps that lead to breast cancer in Nigeria, even though it is less reliable than mammography (7).

Failure in understanding the information and In Nigeria, breast self-examination is welcomed by various religions and it is inexpensive (8). The knowledge and beliefs women have concerning breast cancer and its management may in a significant manner increase their medical help-seeking behaviours (8). Regular breast self-examination performed every month is easy and accessible to every woman as well as efficient, dependable, not time-consuming, non-invasive and does not require any special equipment to carry it out (9). When a woman carries out breast self-examination, she would be able to know the structure of her breast and also notice any difference from a month to the next (1). Studies have revealed that irrespective of the significance of breast self-examination as a means of early diagnosis of breast cancer, women do not possess adequate knowledge of it (1,8). Other studies have shown that an average number of women have a positive attitude towards breast self-examination (10,11).

This study utilized the health belief model by (12) as the conceptual basis for this study. From the conceptual model, knowledge, attitude and practice are the key factors of breast self-examination influencing the perceived susceptibility (family history, gender, exposure to ray, lifestyle, perceived severity of breast cancer and death) and perceived threats (breast cancer and death), perceived benefits (early detection of breast lump, breast cancer prevention), perceived barriers (knowledge and attitude), and perceived self-efficacy (ability to perform BSE successfully and be able to not any variance) which would most likely determine their action (cues to action). According to (2), women perceive breast self-examination as something good but do not adequately practice it. Efforts have been made to increase knowledge, improve attitude and practice of breast self-examination but these have not been significantly enhanced.

According to a Nigerian study on improving knowledge about breast cancer and breast self-examination in female Nigerian adolescents using peer education: a pre-post interventional study, revealed that Following peer training, statistically significant improvement ( $p < 0.001$ ) occurred in most knowledge domains apart from symptomatology (13). Pre-peer training 906(67.8%) students knew about BSE but only 67(4.8%). Significantly more students 1134(94.7%) knew about BSE following peer training (13). According to (14), on using a video-assisted face-to-face intervention, as well as the use of printed handouts, the knowledge and practice of BSE evaluated showed significant improvements on most aspects of knowledge regarding the cancer's early symptoms and risk factors, as well as breast self-examination (BSE). However, the monthly practice of BSE was not significantly increased. Hence, the need for a study on knowledge, attitude and practice of breast self-examination among women attending infant welfare clinic in primary healthcare facilities in Ikenne local government area. Ogun State.

## Materials and Methods

This was a descriptive cross-sectional study conducted to assess the knowledge, attitudes, and practices of breast self-examination among women attending an infant welfare clinic in primary healthcare facilities in Ikenne Local Government Area.

The inclusion criteria include women attending infant welfare clinic in PHCs in Ikenne LGA.

A simple random sampling technique was employed to select respondents who fulfilled the inclusion criteria from the target population. A sample size of 226 was derived using Slovin's formula with 5% (0.05) error tolerance. However, two hundred and thirteen (213) copies of the instrument were retrieved and analyzed (indicating a 94.3% response rate).

A structured questionnaire was used for data collection. The questionnaire comprised five (5) sections; the socio-demographic characteristics, knowledge about breast self-examination, attitude towards breast self-examination practice, extent of practice of breast self-examination and the risk factors (personal and family history) of breast cancer.

IBM SPSS version 25 was used to analyse the collected data. Descriptive statistics (frequency distribution table, percentages, mean and standard deviation) and inferential statistics (Pearson Product Moment Correlation and chi-square) were used for the analysis.

Ethical clearance was obtained from the Babcock University Health Research and Ethical Committee (BUHREC/754/22) before commencement of the study. Participation was voluntary and every finding was treated with utmost confidentiality. Also, other ethical principles were followed to the letters.

**Results**

In **table 1**, It is observed that majority 116 (54.4%) of the women were between the age bracket of 25-34 years (mean age=30 years). More than average of the respondents are married 186(87.3%) and more than half of the respondents had basic or secondary education 123(57.7%). In addition, most of the women were from Yoruba tribe 162(76.1%) while 159(74.6%) of the women are Christians.

**Table 1: Socio-demographic characteristics of participants**

Items	Category	Women n=213 F (%)
<b>Age</b> <b>Mean age ± Std deviation</b> <b>=30years ± 0.85</b>	18-24yrs	73(34.3%)
	25-34yrs	116(54.4%)
	35-44yrs	18(8.5%)
	>45yrs	6(2.8%)
	<b>Total</b>	<b>213(100%)</b>
<b>Marital status</b>	Single	15(7%)
	Married	186(87.3%)
	Divorced	9(4.2%)
	Widowed	3(1.4%)
	<b>Total</b>	<b>213(100%)</b>
<b>Educational level</b>	No formal education	6(2.8%)
	Primary	6(2.8%)
	Secondary	123(57.7%)
	Tertiary	78(36.6%)
	<b>Total</b>	<b>213(100%)</b>
<b>Ethnicity</b>	Yoruba	162(76.1%)
	Igbo	39(18.3%)
	Hausa	3(1.4%)
	Others	9(4.2%)
	<b>Total</b>	<b>213(100%)</b>
<b>Religion</b>	Traditional	12(5.6%)
	Christian	159(74.6%)
	Muslim	33(15.5%)
	Others	9(4.2%)
	<b>Total</b>	<b>213(100%)</b>
<b>Primary healthcare center</b>	Ikenne PHC	60(28%)
	Iperu PHC	33(16%)
	Ogere PHC	50(23.6%)
	Ilishan PHC	70(33%)
	<b>Total</b>	<b>213(100%)</b>

In **tables 2a and 2b**, it was reported that the mean knowledge score of the respondents was  $10.9 \pm 6.78$ . Majority of the respondents score above average of the rating scale. This qualified majority of the women with average knowledge 111 (52.1%), while very few who scored less than 6 57(26.8%) had low knowledge towards breast self-examination. Table 4.2 further shows that majority of the

respondents have heard about breast self-examination 158(74.2%) and more than half of the women's source of knowledge were from the nurses 116(54.5%) followed by friends (13.6%), Radio 23(10.8%), internet 17(7.9%), family 11(5.2%) and lastly from newspaper 5(2.34%). Majority 122(57.3%) of the women acknowledged that early detection of breast cancer is important and should be performed monthly 110(51.3%). More than half of the women concurred that BSE should start as soon as a woman starts menstruating 119(51.6%) and 113 (53%) of the participants agreed that the size and the shape of the breast should be mindful of while performing BSE. Moreso, the use of the middle fingers of each palm and clockwise circular motion while performing BSE should be strictly observed 101(52.1%). In addition, more than half of the women 139(65.3%) disagreed that BSE could be performed while lying down, bathing 139(65.3%), and standing in front of the mirror 124(58.3%).

**Table 2a. Knowledge of breast self-examination among the respondents**

Items	Yes F (%)	No F (%)
1. Have you ever heard of breast self-examination?	158(74.2%)	55(25.8%)
<b>If YES, please continue with the next question</b>		
2. What were your sources of information/knowledge on BSE include?		
• Nurses	116(54.5%)	97(45.5%)
• Radio	23(10.8%)	190(89.2%)
• Newspaper	5(2.34%)	208(97.7%)
• Internet	17(7.9%)	196(92.0%)
• Family	11(5.2%)	202(94.8%)
• Friends	29(13.6%)	184(86.4%)
3. BSE is very important for early detection of breast cancer	122(57.3%)	91(42.7%)
4. Breast self-examination should be performed monthly?	110(51.6%)	103(48.4%)
5. For a woman, BSE should start from the age of 40?	164(76.9)	49(23.1%)
6. BSE should start as soon as a woman starts menstruating?	119(55.9%)	94(44.1)
7. BSE should be done each month immediately after menstruation?	110(51.6%)	103(48.4%)
8. BSE should be done each month just before menstruation?	98(46.0%)	115(54.0%)
9. I should take note of the size of my breast while performing BSE?	113(53.0%)	100(47%)
10. I should take note of the shape of my breast while performing BSE?	115(53.9%)	98(46.1%)

11. When performing breast self-examination, the entire palm of the hand should be used	104(48.8%)	109(51.2%)
12. When performing breast self-examination, the three (3) middle fingers of each palm should be used to examine the breast on the opposite side?	107(50.2%)	106(49.8%)
13. While performing BSE, movement should be in a clockwise circular motion?	101(52.1%)	112(47.9%)
14. The breast should be palpated gently during BSE to check and feel for any lesion or lump?	125(58.7%)	88(41.3%)
15. The nipple is checked during BSE to check for any discharge (for a woman that is not breastfeeding)?	116(54.5%)	97(45.5%)
16. Breast self-examination could be performed while lying down	74(34.7%)	139(65.3%)
17. While lying down for BSE, a pillow should be put under the shoulder for the side to be examined?	104(48.8%)	109(51.2%)
18. BSE could be done while standing in front of the mirror?	89(41.7%)	124(58.3%)
19. BSE could be done while bathing?	74(34.7%)	139(65.3%)
20. The left hand should be used to feel the right breast while the right hand should be used to feel the left breast	131(61.5%)	82(38.5%)
21. Breast self-examination involves looking at the breast first before feeling the breast tissue	116(54.4%)	97(45.6%)

**Table 2b: Summary of the level of knowledge of women attending infant welfare clinic in primary healthcare facilities in Ikenne Local Government Area**

Knowledge on a 20-point rating scale	Frequency	Percentage (%)
Low knowledge (0 – 6)	57	26.8
Average knowledge (7 – 13)	111	52.1
High knowledge (14 – 20)	45	21.1
<b>Total</b>	<b>213</b>	<b>100.0</b>
<b>Mean ± Standard deviation; 10.9 ± 6.78</b>		

In **tables 3a and 3b**, the study reported that the mean attitudinal score of the respondents was  $15.8 \pm 10.7$ . Majority of the respondents score above average on the rating scale. This qualified majority of the women with a positive attitude 147(69%), while a few who scored less than 14, 66(31%) had a negative attitude towards breast self-examination. Furthermore, the finding shows that more than one-third of the women disagreed that breast self-examination would be embarrassing (41.6%) and unpleasant (49.3%) to them. Majority of the respondents agreed that they are capable of examining their breasts without any assistance (50.7%) while one-third (35.2%) of the participants disagreed with avoiding breast self-examination because of lump instead of this, more participants increased their interest in knowing and practicing more about breast self-examination (61.9%) because it is not a waste of time (46.2%) and more than half of the women agreed that all women should perform breast self-examination (64.8%). Therefore, this study shows that the majority of respondents have a positive attitude towards breast self-examination.

**Table 3a: Attitude of breast self-examination among women attending infant welfare clinic in primary healthcare facilities in Ikenne Local Government Area**

ITEMS	A	D	N	Mean±SD
1. Breast self-examination is or will be embarrassing to me	54 (25.4%)	96 (41.6%)	63 (29.6%)	1.15± <b>0.85</b>
2. Performing breast self-examination makes or will make me feel unpleasant	39 (18.4%)	105 (49.3%)	69 (32.4%)	1.16± <b>0.88</b>
3. It is inappropriate to feel my breast tissue in any circumstances	81 (38%)	66 (31%)	66 (31%)	1.00± <b>0.78</b>
4. I am capable of examining my breasts without any assistance.	108 (50.7%)	34 (15.5%)	72 (33.8%)	0.81± <b>0.67</b>
5. I avoid breast self-examination because I worry about finding a lump	66 (31%)	75 (35.2%)	72 (33.8%)	1.01± <b>0.83</b>
6. I am interested in knowing more about and practicing breast self-examination	132 (61.9%)	15 (7%)	66 (31%)	1.30± <b>0.91</b>
7. Breast self-examination is necessary	135 (63.4%)	9 (4.2%)	69 (32.4%)	1.30± <b>0.93</b>
8. All women should perform breast self-examination	138 (64.8%)	9 (4.2%)	66 (31%)	1.33± <b>0.92</b>
9. Breast self-examination is not effective	81 (38%)	66 (31%)	66 (31%)	1.00± <b>0.79</b>
10. Breast self-examination is a waste of time	48 (22.5%)	99 (46.2%)	66 (31%)	1.15± <b>0.87</b>
11. Breast self-examination is not for women who do not have any breast condition	51 (24%)	99 (46.5%)	63 (29.6%)	1.16± <b>0.86</b>
12. A woman is not allowed to feel her breast tissue in my culture	42 (19.8%)	102 (47.9%)	69 (32.4%)	1.15± <b>0.88</b>
13. Breast self-examination requires a special equipment to perform it	69 (32.4%)	81 (38%)	63 (29.6%)	1.08± <b>0.82</b>
14. Breast self-examination is needless since I do not have signs of breast cancer	48 (22.5%)	99 (46.5%)	66 (31%)	1.15± <b>0.87</b>

**KEY: A=Agree, D=Disagree; NA=Neither Agree nor Disagree**

**Table 3b: Summary of attitude towards breast self-examination among women attending infant welfare clinic in primary healthcare facilities in Ikenne local government area**

Attitude on a 27-point rating scale	Frequency	Percentage (%)
Positive attitude (14 – 27)	147	69
Negative attitude (0 – 13)	66	31
<b>Total</b>	<b>213</b>	<b>100.0</b>
<b>Mean ± Standard deviation: 15.8 ± 10.7</b>		

In tables 4a and 4b, presents the mean practice score of the respondents as 8.43 ± 8.36. Majority of the respondents scored less than average of the rating scale. This award most of the respondents with poor practice 147(69%) while very few who score more than ≥15(31%) was good in implementing the consent. However, this study further revealed that majority of the respondents don't practice breast self-examination at all (46.5%) or perform BSE at a particular time each month (54.9%). Many neither move in a clockwise

circular motion (59.2%) nor use three middle fingers of each palm to examine the breast on the opposite side (56.3%). Therefore, this study shows that majority of the respondents had poor practice towards breast self-examination.

**Table 4a: Practice towards breast self-examination among women attending infant welfare clinic in primary healthcare facilities in Ikenne local government area?**

Variable	Not at all	Sometimes	Always
1. I practice breast self-examination	99(46.5%)	69(32.4%)	45(21.1%)
2. I perform BSE self-confidently	99(46.5%)	72(33.8%)	42(19.7%)
3. I perform BSE at a particular time each month	117(54.9%)	69(32.4%)	27(12.7%)
4. Each month immediately after menstruation I perform BSE	135(63.4%)	57(26.8%)	21(9.9%)
5. I perform BSE while standing in front of the mirror	132(62%)	57(26.8%)	24(11.3%)
6. I perform BSE while lying down	138(64.8%)	51(23.9%)	24(11.3%)
7. I perform BSE while bathing	141(66.2%)	51(23.9%)	21(9.9%)
8. I perform BSE with my clothes on	168(78.9%)	18(8.5%)	27(12.7%)
9. I use my entire palm while performing BSE	138(64.8%)	45(21.1%)	30(14.1%)
10. I use three (3) middle fingers of each palm to examine the breast on the opposite side	120(56.3%)	54(25.4%)	39(18.3%)
11. I do BSE each month to look out for any change in size and shape of my breast	114(53.5%)	57(26.8%)	42(19.7%)
12. I move in a clockwise circular motion when I do BSE	126(59.2%)	51(23.9%)	36(16.9%)
13. I feel my armpit when I perform BSE	117(54.9%)	48(22.5%)	48(22.5%)
14. I particularly check for breast lump each time I perform BSE	123(57.7%)	42(19.7%)	48(22.5%)
15. While standing in front of the mirror I put my hand beside, then raise them above my head, put them by my waist and finally lean forward	126(59.2%)	66(31.0%)	21(9.9%)

**Table 4b: Summary of practice for breast self-examination among women attending infant welfare clinic in primary healthcare facilities in Ikenne Local Government Area.**

Practice on a 30-point rating scale	Frequency	Percentage (%)
Good practice (15 – 30)	66	31
Poor practice (0 – 14)	147	69
<b>Total</b>	<b>213</b>	<b>100.0</b>
<b>Mean ± Standard deviation: 8.43 ± 8.36</b>		

In **tables 5a and 5b**, it was reported that the that majority of the respondents were low to risk (90.1%) while very few were high to risk (9.9%). In addition, many of the respondents had not attained menopause (87.3%), most don't have personal history of any breast disease (85.9%), many had neither been on radiation therapy before (87.3%), nor hormonal drugs (83.1%), and more than half don't drink alcohol (91.5%) while almost all were not smoking (93%).

**Table 5a: Analysis of women at risk of developing breast cancer among women attending infant welfare clinic in primary healthcare facilities in Ikenne Local Government Area?**

Items	Yes	No
1. Have you attained menopause?	27 (12.7%)	186 (87.3%)
2. Do you have a personal history of any breast disease?	30 (14.1%)	183 (85.9%)

3.	Does anyone in your family (like mother, sister, or aunt) have a history of any breast cancer/disease?	33 (15.5%)	180 (84.5%)
4.	Have you been on radiation therapy before?	27 (12.7%)	186 (87.3%)
5.	Are you currently on any hormonal drug	36 (16.9%)	177 (83.1%)
6.	Do you exercise at least 30 minutes a week?	81 (38%)	132 (62%)
7.	Did you have your first pregnancy after the age of 30?	39 (18.3%)	174 (81.7%)
8.	Do you drink alcohol?	18 (8.5%)	195 (91.5%)
9.	Do you smoke?	15 (7%)	198 (93%)

**Table 5b: Summary of risk for developing breast cancer among women attending infant welfare clinic in primary healthcare facilities in Ikenne Local Government Area**

Categories	Frequency	Percentage (%)
High risk (4.1-9.0)	21	9.9
Low risk (0 – 4)	192	90.1
<b>Total</b>	<b>213</b>	<b>100.0</b>
<b>Mean ± Standard deviation: 1.43 ± 2.30</b>		

**Table 6** reported that the finding revealed a positive significant relationship between knowledge and attitude of women towards breast self-examination ( $r = 0.755$ ;  $p=0.000 < 0.05$ ). The hypothesis which stated that “there is no significant relationship between knowledge about breast self-examination and attitude towards breast self-examination among women attending infant welfare clinic in primary healthcare facilities in Ikenne local government is hereby rejected by this finding.

**Table 6: Correlation analysis between knowledge about breast self-examination and attitude towards breast self-examination among women attending infant welfare clinic in primary healthcare facilities in Ikenne local government area.**

Variables	N	Mean	S. D	R	Sig.	Remark
Knowledge	213	10.91	±6.78	.755	.000	Significant
Attitude		20.47	±18.6			

**\*\*.**  
**Correlation is significant at the 0.05 level (2-tailed).**

**Table 7** reported that the finding of the study revealed positive significant relationship between practice and attitude of women towards breast self-examination ( $r = 0.585$ ;  $p=0.000 < 0.05$ ). The hypothesis which state that “There is no significant relationship between attitude towards breast self-examination and breast self-examination practice among women attending infant welfare clinic in primary healthcare facilities in Ikenne local government area is hereby rejected by this finding.

**Table 7: Correlation Analysis between attitude and breast self-examination practice among women attending infant welfare clinic in primary healthcare facilities in Ikenne Local Government Area.**

Variables	N	Mean	S. D	R	Sig.	Remark
Practice	213	8.43	±8.36	.585	.000	Significant
Attitude		20.47	±18.6			

\*\*.  
Correlation is significant at the 0.05 level (2-tailed).

Table 8 reported that the finding of

the study revealed positive significant relationship between practice and knowledge of women towards breast self-examination ( $r = 0.571$ ;  $p=0.000 < 0.05$ ). The hypothesis which stated that “There is no significant relationship between knowledge of breast self-examination and breast self-examination practice among women attending infant welfare clinic in primary healthcare facilities in Ikenne local government area is hereby rejected by this finding.

**Table 8: Correlation Analysis between knowledge of breast self-examination and breast self-examination practice among women attending infant welfare clinic in primary healthcare facilities in Ikenne Local Government Area.**

Variables	N	Mean	S.D	R	Sig.	Remark
Knowledge	213	10.91	±6.78	.571	.000	Significant
Practice		8.43	±8.36			

\*. Correlation is significant at the 0.05 level (2-tailed).

Table 9 Shows a negative

significant association between the level of education and practice of breast self-examination with a p-value of  $0.000 < 0.05$  ( $df=60$ ,  $r=-0.305$   $X^2=272.596$ ). Therefore, the null hypothesis is hereby rejected by this study. This implies an increase in level of education may not lead to an improvement in practice of breast self-examination.

**Table 9: Correlation between level of education and practice of breast self-examination among women attending infant welfare clinic in primary healthcare facilities in Ikenne Local Government Area**

		Practice of Breast Self-Examination			X <sup>2</sup>	R	Df	P-value
		Good	Poor	Total				
Level of education	No formal education	-	6 (2.81%)	6 (2.81%)	272.596 <sup>a</sup>	-0.305	60	0.000
	Primary	3 (1.4%)	3 (1.4%)	6 (2.81%)				
	Secondary	27 (12.7%)	96 (45.0%)	123 (57.7%)				
	Tertiary education	36 (16.9%)	42 (19.7%)	78 (36.6%)				
Total		66 (30.9%)	147 (69.1%)	213 (100%)				

## Discussion

Analysis shows that most of the women who participated in the study were married, had secondary education and most were between the age of 25-34 years. This result is in line with a study conducted by (1), who reported that the mean age range for women who practice breast self-examination is 20 years and above.

This study shows that majority 111 (52.1%) of the respondents had average knowledge towards Breast self-examination. This result correlates with a study led by (8) among market women in Ibadan, he reported that 425 (70.8%) of them do not have adequate knowledge of how to perform breast self-examination but contradicts with a study led by (15), who revealed that 82.2% of the respondents had good knowledge towards breast self-examination. Supported by (16), who showed that 328 (92.1%) of the respondents had adequate knowledge of breast self-examination. Therefore, this study hereby infer that more than half of the women were inadequate in knowledge towards breast self-examination against by (15,16), this might be as a result of the level technology, development and education in the area while this study further supported by (8) due to the level of education of the respondents in research settings.

This current study opined that majority of the respondents had positive attitude 147(69%), towards breast self-examination among women attending infant welfare clinic. This result is against the study led by (16), among female IT professionals in Silicon Valley of India, it was reported that many of them had a negative attitude towards breast self-examination due to their cultural beliefs and their unpleasant experiences. Meanwhile, this current result correlates with a study conducted by (10) among female undergraduate students in Addis Ababa University of Ethiopia, who reported that 206 (50.6%) of the respondents had a positive attitude towards breast self-examination. This result was the same as this current study because of the level of exposure of the respondents towards education.

This study further revealed that many of the women 147(69%) had poor level of practice of breast self-examination, this result correlates with a study led by (16), who opined that some of the 222 out of 330 respondents poorly practiced breast self-examination. This result was supported by a study conducted by (10) in Addis Ababa University in Ethiopia who found that 87 (21.4%) of the respondents have ever performed breast self-examination, which means that (78.4%) had not being performing breast self-examination.

Furthermore, this study showed that more than one-third of the respondents had not practiced breast self-examination at all (46.5%), although (32.4%), sometimes practice while few (21.1%), always practice BSE. This result is in line with a study opined by (11) who found that respondents who had ever performed breast self-examination were only (41%), those who had done it in the last 12 months were 49 (29.5%) while an exceeding low 5 (3%) had regularly done breast self-examination in the last 12 months before the study. Therefore, this study shows that less than average women in Ikenne local government area always practice BSE, this is similar to the conclusion of (17), who found that they perceive breast self-examination as something good but do not adequately practice it. This might be as a result of their poor time for BSE procedures, lack of exposure, and low level of education, for most women attending the infant clinic were secondary school holders, while a few were tertiary graduates. This limits many participants from practising BSE since they were not exposed to its importance. Therefore, to enhance literacy towards BSE among women, conventional and online seminars, symposiums, and lectures should be provided and encouraged not only in the hospital but also extended to schools, religious centres, and market etc.

This study also revealed that 192 (90.1%) of the participants were at low risk of breast cancer. This result contradicts a study led by (2) who opined that the rate of women being diagnosed with breast cancer is on the increase in almost all regions of the world (3) and also

in many regions of Africa. This current result contradicts the previous study because many of the participants had not attained menopause (87.3%), many didn't have a personal history of any breast disease (85.9%), and most were neither on radiation therapy (87.3%) nor hormonal drugs (83.1%). The result also revealed that many 132 (62%) do not engage in at least 30 minutes of exercise each week. This is an eminent risk.

### **Conclusion**

In conclusion, despite the fairly average knowledge of women and positive attitude towards breast self-examination, there is a record of poor practice towards breast self-examination among women attending infant welfare clinics in primary healthcare facilities in Ikenne local government area. Therefore, to eradicate these poor practices, proper orientation and health education need to be organized and carried out to enhance the knowledge of breast self-examination among women and, most importantly to improve breast examination practice among women in Ikenne Local Government Area.

### **List of abbreviations**

**BSE:** Breast self-examination.

**BUHREC:** Babcock University Health Research Ethical Committee.

**BUTH:** Babcock University Teaching Hospital

**CBE:** Clinical breast examination.

**MRI:** Magnetic Resonance Imaging

**PPMC:** Pearson product-moment correlation

**SPSS:** Statistical Package for the Social Sciences.

**WHO:** World Health Organization.

### **Declarations**

#### *Ethical approval and consent to participate*

The study was approved by the Babcock University Health Research Ethical Committee (BUHREC) with ethical approval number (BUHREC/754/22).

#### *Consent for publication*

The author hereby gives consent for the publication of this work under the Creative Commons CC Attribution-Non-commercial 4.0 license

#### *Availability of data and materials*

The data and materials associated with this research will be made available by the author on reasonable request.

#### *Competing interests*

The authors have declared no conflict of interest

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#### Authors contribution

This research incorporated the efforts of all the authors from inception to completion.

CEA conceived and designed the research, analyzed data, and wrote the draft manuscript. OHA: research supervision, manuscript editing. CMD: Data collection, organization and entry. The three authors reviewed, approved and agreed with the submission of the manuscript.

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