

Utilization of Early Detection Measures of Breast Cancer Among Women in Laniba Communities of Akinyele Local Government Area, Ibadan, Oyo State, Nigeria

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Abstract

The efficiency of treatment and the likelihood of survival both improve with earlier detection of breast cancer. This study assessed the early detection measures of breast cancer among women of reproductive age (18 - 45years) in Laniba communities of Akinyele LGA, Oyo State with the purpose of improving utilization of early breast detection measures. A cross sectional descriptive design method was used for this study conducted at Laniba Community Ibadan, Nigeria. The sample size used for this study was three hundred and twenty six (326) respondents. A simple random sampling method was employed to select study participants ensuring a fair representation of the target population. A structured

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questionnaire was used to collect data from the participants and results were analysed using SPSS. The findings of the study showed that sixty seven percent (67%) of the respondents have a high level of awareness of breast cancer with 71.9% of the respondents' source of information on cancer was from the mass media. Result further revealed that 58% of respondents are aware of the breast cancer preventive measures. The study concludes that there is limited usage of early breast cancer detection methods which is strongly influenced by public awareness levels, familiarity with early detection techniques, and most importantly by the application of information.

Keywords: Utilization, Early detection measures, Breast cancer, Women,



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INTRODUCTION

Globally, Breast cancer is the most prevalent cancer in women and generally the second most common cancer with about 1.4 million cases diagnosed annually. In 2018, 2.1 million incident cases of breast cancer were diagnosed worldwide (second most common cancer overall after lung cancer) representing nearly 12% of all incident cancer cases and an estimated 627,000 deaths were expected to occur globally (Mehejabin&Rahman, 2022). Generally, the breast cancer rate is higher in the developed world than the developing countries, which may be as a result of certain lifestyles and reproductive factors that are more common in the developed world. The difference may be exaggerated due to relatively low awareness, screening practices, and diagnoses in the developing countries, though the rates are increasing rapidly in many developing countries (Osei-Afriye et al., 2021). Breast cancer is the most common cancer and the leading cause of death in women around the world and in our country (GLOBOCAN, 2012). The most important factor that determines the prognosis of the disease is early diagnosis. Although breast cancer is common in women of reproductive age, with early detection, it can be treated with quite successful results and cancer mortality can be reduced. The diagnosis of breast cancer can be easily made by early detection and screening methods and treatment can be initiated early (Ayla et al., 2015). The low survival rates in developing countries are explained by scarcity of early detection programs and utilization of the detection measures, resulting in a high proportion of women presenting with late-stage disease at diagnosis, along with the lack of adequate diagnosis and treatment facilities (Rivera-Franco&Leon-Rodriguez, 2018). Early diagnosis and screening methods of breast cancer include breast self-examination (BSE), clinical breast examination (CBE) and mammography (Johnson, 2019). The most important method that reduces breast cancer mortality is screening mammography; early diagnosis by screening mammography resulted in up to a 30% decrease in mortality. However, mammography is an expensive method that requires experienced personnel (Ozmen, 2011).

The American Cancer Society and the American Cancer Institute recommends mammography in women older than 40 years as a method of breast cancer detection screening, even though there are no symptoms. Clinical breast examination (CBE) is recommended in every three years for 20-40 years of age, and once a year above 40 years of age by a trained health personnel, and after the age of 20 particularly in countries where screening programs are inadequate, regular monthly BSE is recommended after explanation of its benefits and limitations by medical personnel (National Cancer Institute, 2014). BSE is a recommended method to increase women's awareness and it is the mostly utilized breast cancer measures although, its effect on reducing cancer mortality is debated. Regular BSE allows women to recognize their breast and notice potential changes early, thus leading to early admission to medical institutions (Johnson, 2019). While educating women about breast cancer, these information should be kept in mind; early detection methods and their timing and frequency of utilizing these measures should also be explained. Ayla et al. (2015) posited increasing awareness of the society about breast cancer and increasing the level of knowledge through planned training programs may provide regular application of utilization of early detection measures, early screening and diagnosis methods. Therefore, by presenting early diagnosis and appropriate treatment options, the burden of breast cancer on the community can be reduced. Studies have demonstrated that factors related to women's awareness, knowledge and perceptions about the disease may contribute significantly to health-seeking behaviours

and utilization of early detection measures (Osei-Afriye et. al., 2021). Barriers to utilization of early detection measures should be identified and addressed. These are complex and multi factorial, including structural, sociocultural, personal and financial factors that can influence a woman's opportunities to seek and receive care (Akuoko et al., 2017). There is a low utilization of these early detection measures in low and middle income countries due to the lack of early detection programme as many as 75% of women with breast cancer present at an advanced stage resulting in worse outcomes (O'Donovan et al., 2020). Therefore, given the burden of breast cancer in low and middle income countries, there is a growing and pressing need to explore the utilization of early detection measures of breast cancer among women of reproductive age in Laniba community which in turn will improve survival rates and quality of life.

This study assessed early detection measures of breast cancer among women of reproductive age (18 - 45years). Specifically, the study assessed

- a. Awareness of women on breast cancer
- b. Awareness of breast cancer preventive measures and
- c. Utilization of early breast cancer detection measures.

Research Questions

1. What is the level of awareness of women on breast cancer?
2. What is the level of awareness on preventive measures of breast cancer among women?
3. What is the level of utilization of early detection measures of breast cancer among women?

Methodology

This study adopted a descriptive cross-sectional based study conducted at Laniba community, Akinyele Local Government Area, Ibadan, Nigeria. The sample size was calculated using Cochran formula; this comprised of 326 women of reproductive age in Laniba community. A simple random technique was used in selecting participants ensuring a fair representation of the target population. In addition, an open and close-ended validated questionnaire was used and the responses from the respondents were analysed using Statistical Package for Social Sciences (IBM SPSS) version 25.0. Furthermore, descriptive and inferential statistical analysis methods were employed to analyse the quantitative data that was derived from this study. The result was presented using descriptive statistics such as percentages and means with standard deviation, while Chi-square test (X^2) was used to test for relationship/difference/association between two categorical variables.

Results

Research Question 1: What is the level of awareness of women on breast cancer?

Shown in Figure 1 is the respondents' awareness of breast cancer. Three hundred and ten (95.1%) of the respondents have heard about breast cancer. 234(71.9%) of the respondents' source of information on cancer was mass media, doctor 135(41.4%), friends 98(29.9%), family member 69(21.3%), church 7(2.2%) and school 6(1.9%) as showed in figure 2. The respondent risk factors for breast cancer as displayed in figure 3 shows that 75.3% of the respondents show radiation exposure is a common risk factor for breast cancer, smoking and alcohol consumption (55.2%), overweight and obesity (50.9%), hormone replacement therapy (49.1%) and over age (34%). As shown in Figure 4 is the respondents' signs and symptoms of breast cancer. 80.2% of the respondents are aware of painless and palpable breast lump as a sign and symptom, redness of the breast skin (73.8%), painless mass under the armpit (72.2%), wound around the nipple (71.9%) and abrupt changes in the shape of the

breast (71.6%). Figure 5 shows respondents' awareness towards breast cancer. 58% of the respondents have a high level of awareness.

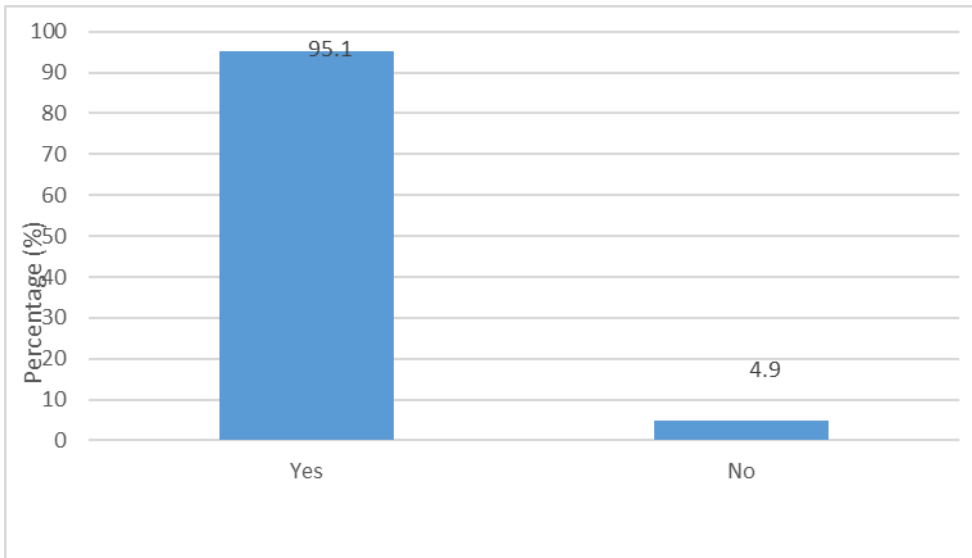


Figure 1: Heard about breast cancer

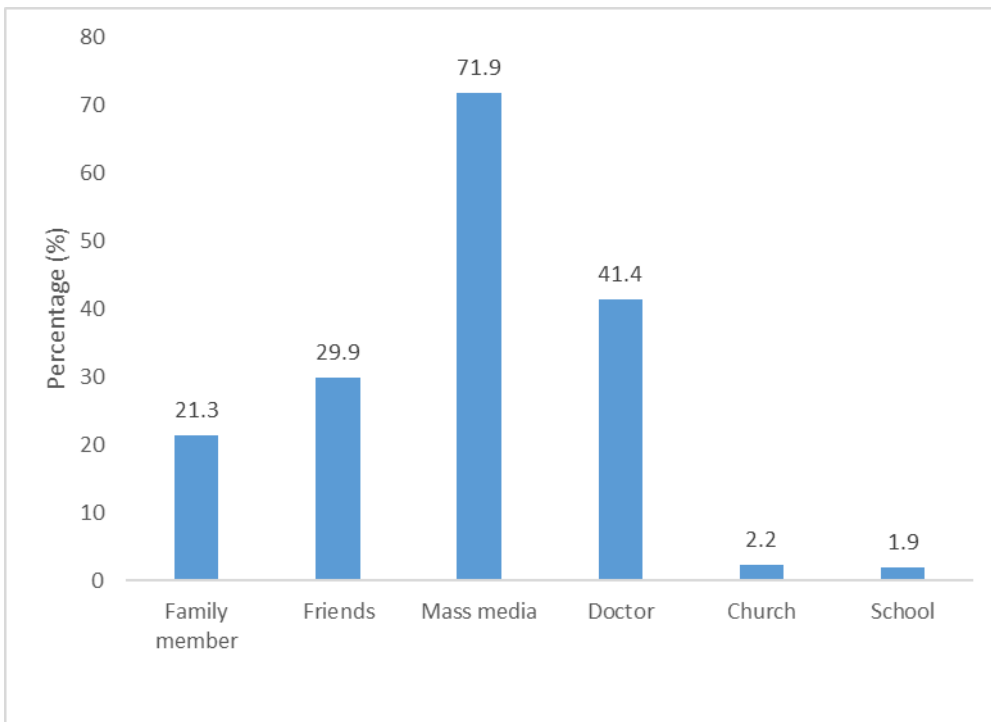


Figure 2: Source of information on Breast cancer

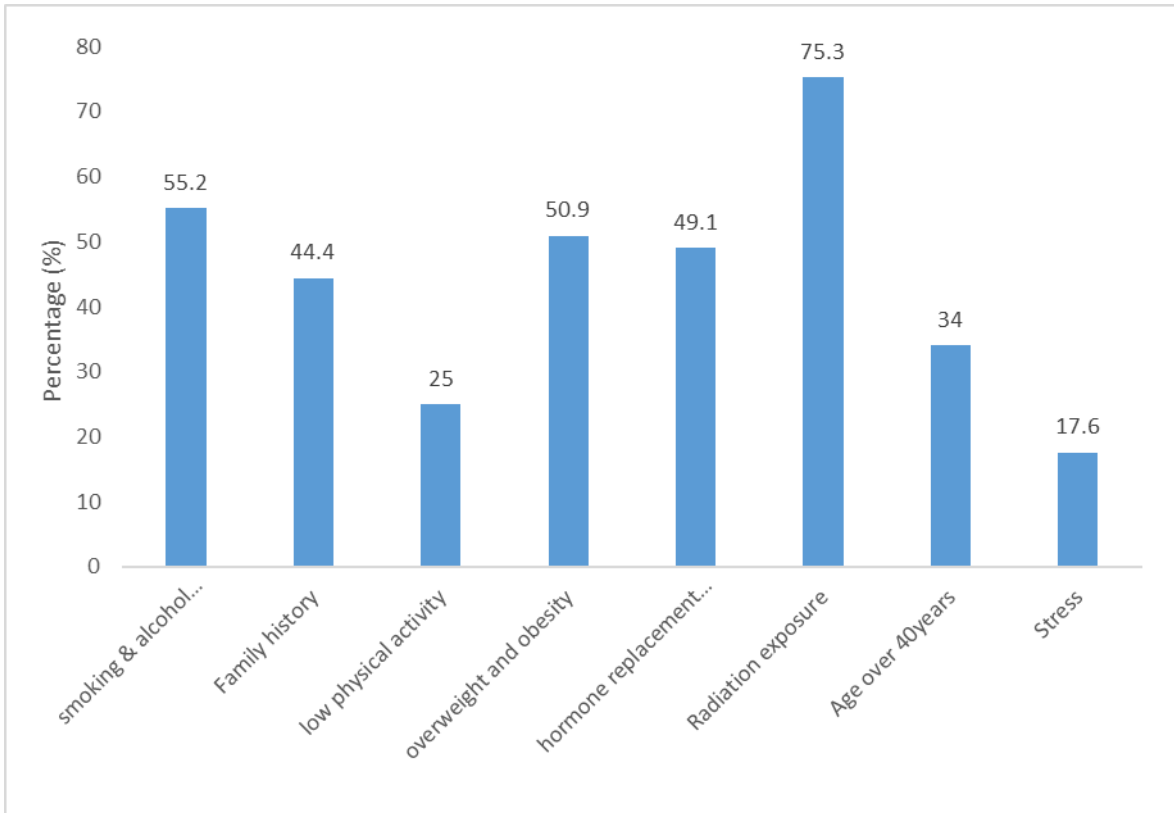


Figure 3: Breast cancer risk factor

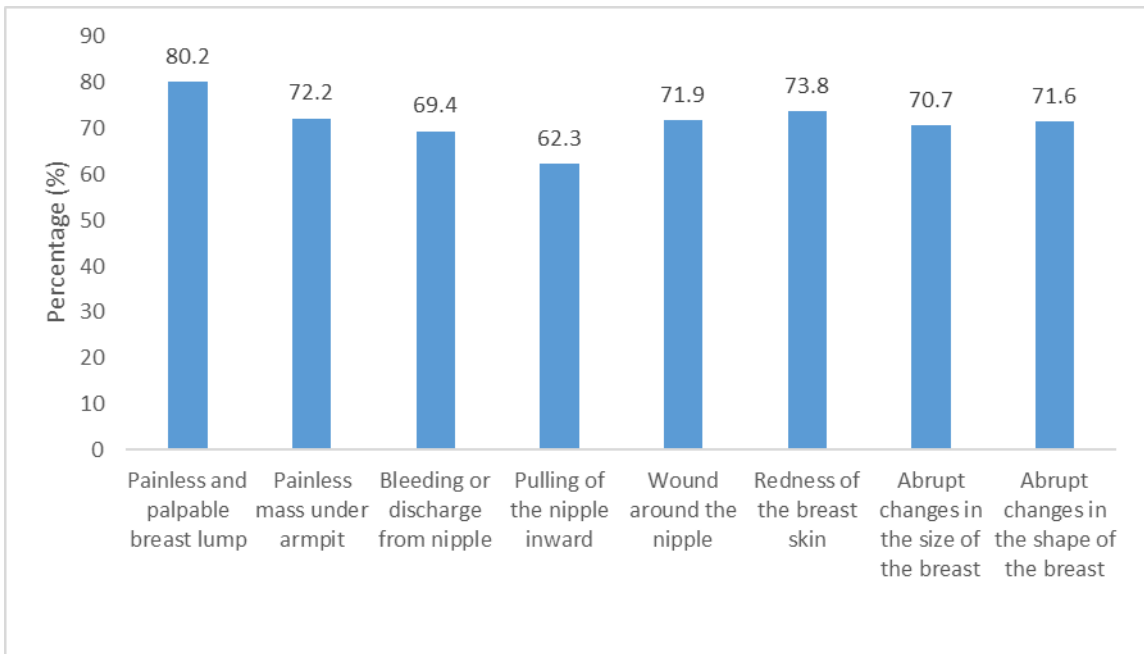


Figure 4: Sign and symptoms of breast cancer

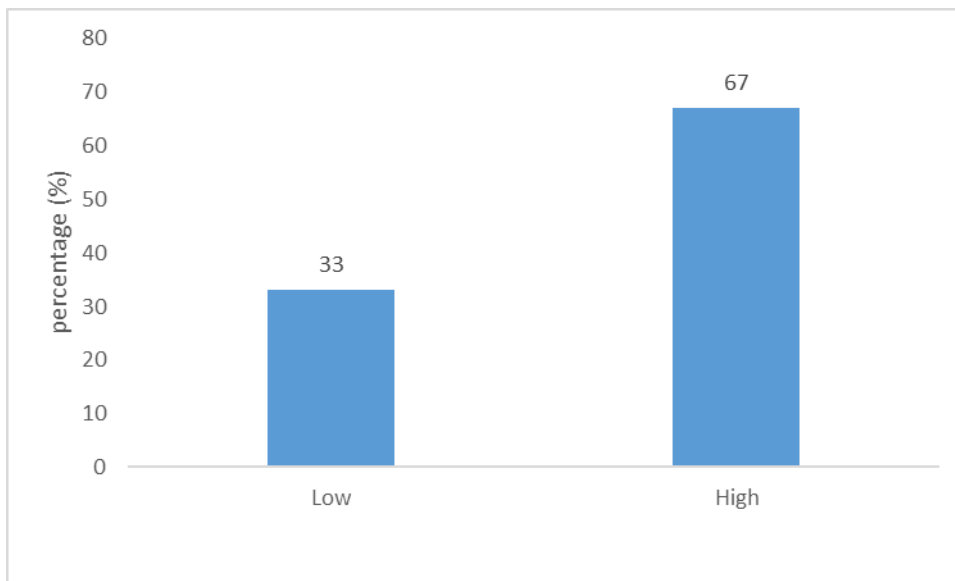


Figure 5: Respondents awareness towards breast cancer

Research Question 2: What is the level of awareness on preventive measures of breast cancer among women?

As shown in table 1, one hundred and twenty nine (39.5%) of the respondents were aware that the best time to start a breast exam by a doctor or midwife is after 20 years. 181 (55.6%) of the respondents have heard about mammography, with 14.1% of them aware of starting mammography examination after 35 years. 279 (85.5%) of the respondents have heard about the self-examination of the breast, with less than half (43.9%) of the respondents aware that breast examination can start after 20 years. 55.6% of the respondents are aware of doing a 1 week after the onset of menstruation to examine their breasts. (95%) of the respondents were aware that self-examination of the breast is useful for early diagnosis. 68.6% of the respondents were aware that breast cancer self-examination should be performed monthly. Figure 6 shows the level of respondents awareness of breast cancer preventive measures.

Table 1 frequency distribution of respondents' awareness for early detection measures of breast cancer Preventive measures

Variables	N	%
Heard about breast cancer		
Yes	308	95.1
No	16	4.9
Knows about anyone with breast cancer		
Yes	143	44.1
No	181	55.9
Best time to start breast exam by doctor or midwife		
After 20years	128	39.5
After 25years	167	51.5

After 30years	29	9
Heard about mammography		
Yes	180	55.6
No	144	44.4
Best time to start mammography		
After 20years	81	40.9
After 25years	89	44.9
After 30years	28	14.1
Heard about self-examination		
Yes	277	85.5
No	47	14.5
Best time to start self-breast examination		
After 20years	119	43.9
After 25years	143	52.8
After 30years	9	3.3
Best time to do a self-breast exam in the menstrual cycle		
1 week after onset of menstruation	154	55.6
1 month after onset of menstruation	123	44.4
Self-examination of breast is useful for early diagnosis		
Yes	308	95
No	16	4.9
How often should a breast cancer self-examination be performed		
Monthly	199	68.6
Quarterly	91	31.4

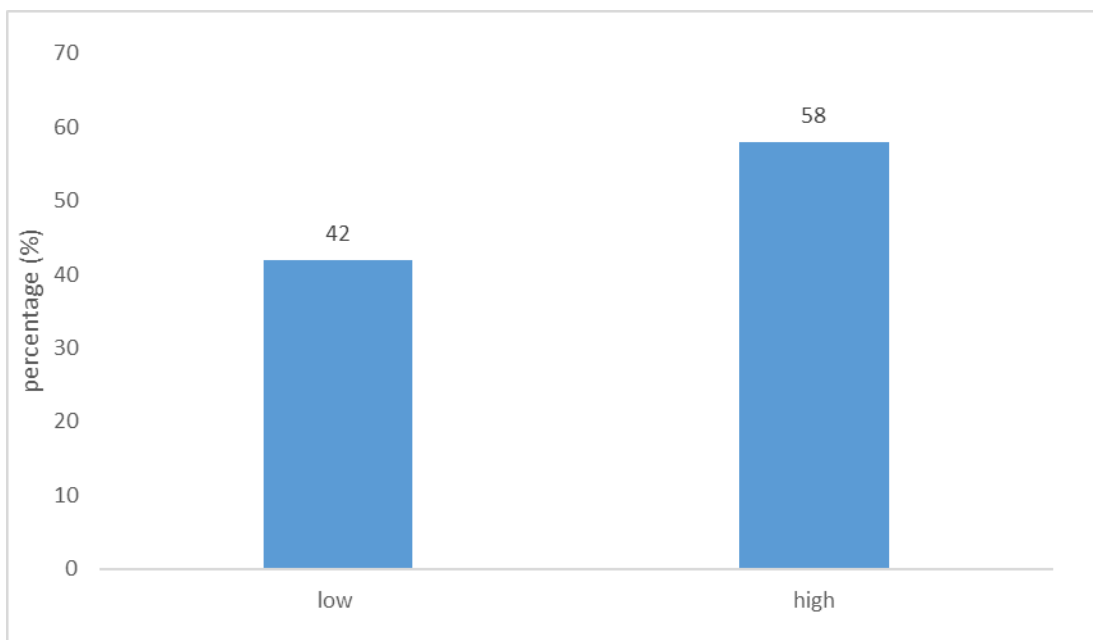


Figure 6: Respondents Awareness towards breast cancer preventive measures

Research Question 3: What is the level of utilization of early detection measures of breast cancer among women?

Table 2 reveals the respondents' assessment of the utilization of early breast cancer detection measures. 64% of the respondents have never undergone periodic mammography before, with more than half (57.7%) of the respondents that undergo mammograms being advised by a physician. Many (58.2%) of the respondents undergo periodic mammography because of the fear of getting cancer. Most (74.4%) of the respondents have performed breast examination, with about two-fifth of those that practice self-examination usually doing it monthly. More than two-thirds of the respondents use the standing in front of mirror method for self-examine. In addition, results (figure 8) shows (60%) of the respondents had low level of utilization of early detection measures of breast cancer

Table 2: Frequency distribution of respondents' assessment of utilization of early breast cancer detection

Variables	N	%
Undergone periodic mammography before		
Yes	116	35.8
No	208	64.2
Who made the decision for undergoing the mammogram		
Myself	55	42.3
Physician	75	57.7
Motive for undergoing periodic mammography		
Fear of getting cancer	139	58.2
Somebody I know was diagnosed with cancer	100	41.8
Reason for undergoing mammography		
Healthcare inaccessibility	104	32.1
Belief in alternative treatment	54	16.7
Do not suffer from breast problem		
fear of discovering cancer	179	55.2
Too young	80	24.7
Cost of examination	129	39.8
Physician have any role in educating you about the importance of mammography		
Yes	247	76.2
No	77	23.8
Perform breast self-examination		
Yes	241	74.4
No	83	25.6
If yes, how many times		
Daily	123	38
Weekly	58	17.9
Monthly	130	40.1

Yearly	13	4
If the answer is no, indicate the reason		
Time consuming	225	69.4
Not knowledgeable about self-examination	258	79.6
Fear of finding abnormalities	248	76.5
Method use for self-examination of breast		
Standing in front of the mirror	202	62.3
Laying on bed and using your palm	173	53.4
Using fingers	167	51.5

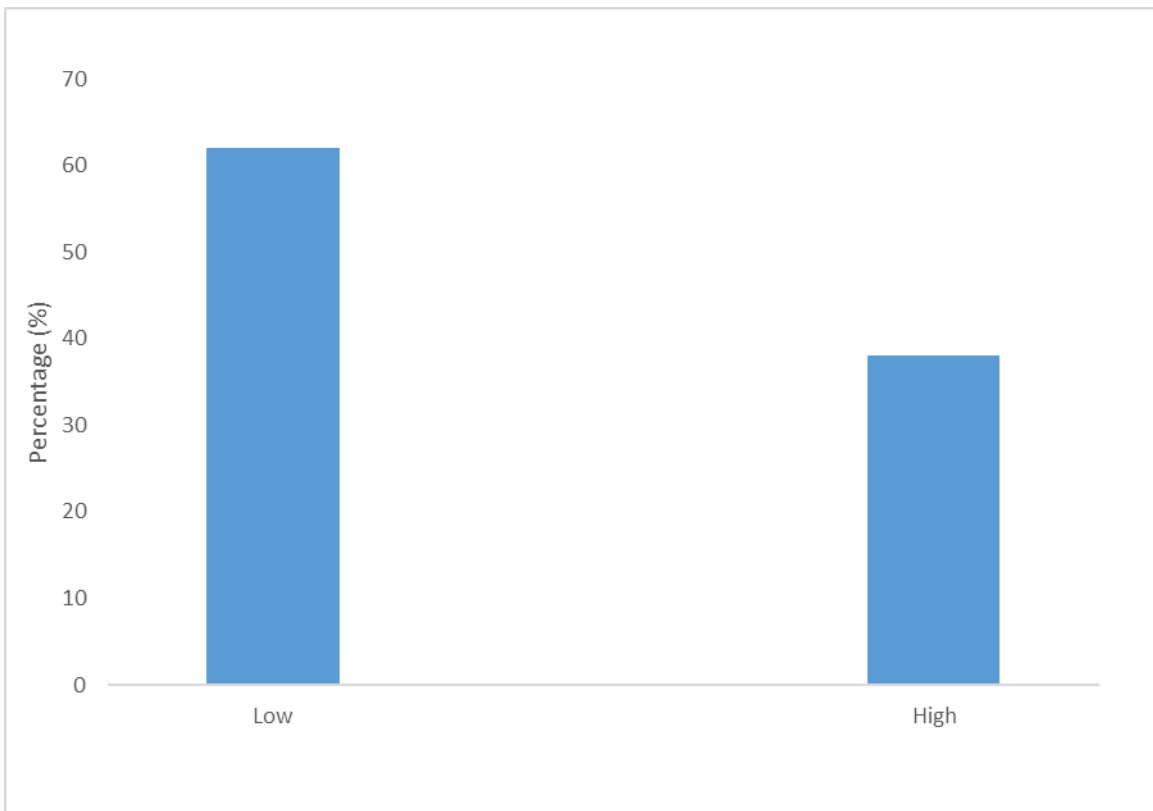


Figure 8: Level of utilization of early detection measures of breast cancer

Hypotheses

Table 3: Association between respondents’ socio-demographic characteristics and breast cancer awareness

Variables	Low (%)	High (%)	χ^2	P-value
Age (years)			5.36	0.148
≤24	41 (50)	41 (50)		
25-34	59 (40.1)	88 (59.9)		
35-44	18 (31.6)	39 (68.4)		
≥45	18 (47.4)	20 (52.6)		
Marital status			0.39	0.821
Single	52 (41.9)	72 (58.1)		
Married	80 (42.6)	108 (57.4)		
Divorced/Separate/Widowed	4 (33.3)	8 (66.7)		
Education			9.91	0.042*
None	5 (45.5)	6 (54.5)		
Primary	11 (78.6)	3 (21.4)		
Secondary	19 (50)	19 (50)		
Tertiary	84 (38.7)	133 (61.3)		
Postgraduate	17 (38.6)	27 (61.4)		
Level of Employment			8.68	0.034*
Civil servant	22 (29.3)	53 (70.7)		
Self employed	48 (42.9)	64 (57.1)		
Student/unemployed/retired	34 (43.6)	44 (56.4)		
Trader	32 (54.2)	27 (45.8)		
Religion			0.82	0.662
Christianity	87 (41.2)	124 (58.8)		
Islam	47 (42.7)	63 (57.3)		
Traditional	2 (66.7)	1 (33.3)		

*statistically significant

As shown in Table 3, the proportion of high awareness of breast cancer is more among respondents with postgraduate (61.4%) level of education compared to tertiary (61.3%), none (54.5%), secondary (50%) and primary (21.4%) at p-value =0.042. There is a high proportion of breast cancer awareness among respondents that were civil servants (70.7%) compared to those that were self-employed (57.1%), student/retired/unemployed (56.4%) and traders (45.8%) at p-value =0.034.

Table 4: Association between respondents' utilization of early breast cancer detection measures and the awareness on breast cancer

Variables	Awareness			

	Low (%)	High (%)	X ²	P-value
Utilization			9.62	0.002*
High (%)	65 (52.8)	58 (47.2)		
Low(%)	71 (35.3)	130 (64.7)		

*statistically significant

Despite high level of awareness generally, the proportion of women utilizing BCA preventive measures is high among women with low level of awareness compared to those with high level of awareness. Two hundred and eleven (64.7%) compared to one hundred and fifty four (47.2%) at p-value =0.002 (table 4).

DISCUSSION

Breast cancer is the most common form of cancer among women with early detection being pivotal in improving survival rates and treatment outcomes. Utilizing early detection methods such as regular mammograms, breast self-exams, and clinical breast exams can help detect cancer at an earlier stage when it is most treatable. In this discussion, we will explore the importance of early detection in breast cancer, the various screening methods available and the role that healthcare providers, organizations, and individuals can play in promoting early detection efforts. Increasing awareness and access to early detection strategies can lead us towards reducing the impact of breast cancer on individuals, families, and communities

Assessment of the awareness of women on breast cancer

Findings from this study revealed majority of the respondents had heard about breast cancer with more than two-fifth of the respondents affirming they knew someone with breast cancer. This may be attributed to the increase in the prevalence of breast cancer in the country. This is similar to the study done by Ohaeri and Aderigbigbe (2019) in Ibadan reported good level of awareness of breast cancer among women.

Similarly, a study by Amin, et al. (2020) which was a hospital based survey on knowledge, awareness and perceived barriers regarding breast cancer screening among females in Bangladesh; revealed that majority of the respondents had some knowledge of breast cancer. This is supported by another study by Alsowayan, et al (2020) on breast cancer knowledge and awareness among females in Al-Qassim Region, Saudi Arabia in 2018 which revealed that more than four-fifth of the respondents were highly aware of breast cancer. In addition, a study by Dadzi and Adam (2019) on assessment of knowledge and practice of breast self-

examination among reproductive age women in Akatsi South district of Volta region of Ghana revealed that far more than four-fifth of the participants had a high level of knowledge about breast cancer awareness.

However, Ajibola et al. (2019) study among women in a community in Oyo State Nigeria, revealed low knowledge and practice of breast cancer screening which contradict findings from the study. Gangane (2018) on the knowledge, attitudes, practice, delay to care and quality of life of breast cancer in rural India also reported that there was poor level of awareness and breast self examination was hardly practised.

Assessment of the awareness of the preventive measures of breast cancer

Results from this study revealed just above half of the respondents were aware that the best time to start a breast exam by a doctor or midwife is after 25 years. More than half of the respondents have heard about mammography, and more than two-fifth of them were aware of starting mammography examination after 25 years. Far more than four-fifth of the respondents had heard about the self-examination of the breast. These substantial level of awareness of early detection measures can attributed to the availability of information in this era of technology which can be gotten on the internet, from health workers, or friend/loved ones.

More than half (52.8%) of the respondents were aware that breast examination can start after 25 years of age. While close to three-quarter of the respondents were aware of performing it a 1 week after the onset of menstruation to examine their breasts. Majority of the respondents were also aware that self-examination of the breast is useful for early diagnosis. More than three-quarter of the respondents were aware that breast cancer self-examination should be performed quarterly. Although, a study by Azemfac, et al. (2019) on knowledge and practice of breast self-examination and prevalence of breast disease in South west Cameroon revealed that about fifty percent had heard about BSE, meanwhile below four-fifth of the household participants indicated they had no knowledge of BSE. has never heard of BSE In addition, another study by Dadzi and Adam (2019) on assessment of knowledge and practice of breast self-examination among reproductive age women in Akatsi South district of Volta region of Ghana revealed that only about two-fifth of the respondents believed that the most appropriate time for self-breast examination is between 2 and 3 days after cessation of menstruation. Almost fifty percent of the women thought BSE can be carried out any time within the month. While few of them thought the appropriate time for self-breast examination was a few days before menstruation starts.

Utilization of early breast cancer detection measures

The findings from this study revealed majority of the respondents had low utilization of early breast cancer detection measures. This is similar to a study by Salama (2020) in Egypt, the study concluded that the utilization of mammography screening rate was low. Contrastingly, a study by Alsowayan, et al. (2020) on breast cancer knowledge and awareness among females in Al-Qassim Region, Saudi Arabia in 2018. It revealed more than half of the respondents had done self-breast examination; most of the respondents that did it was because of advice from a healthcare worker, for medical purpose, breast lump, regular medical screening or as a result of breast cancer occurrence to a loved one.

Furthermore, Azemfac, et al. (2019) reported approximately one-quarter of the study participants had heard of BSE but they did not how to perform it. Among women who reported knowledge of BSE, below one-fifth practised it once in a year, close to three-fifth

practised it several times per year, and below three-fifth practised BSE monthly basis. Above four-fifth of the respondents who practised BSE did not wait to perform it at a specific time of the month, although few of them performed BSE the week or the second week following their menstruation.

Also, another study by Ginsburg et al. (2021) stated that besides geographic, financial, and other structural factors, access to breast cancer early detection is also determined by the quantity and quality of human resources for health which is congruent with this study that shows that cost of examination and healthcare inaccessibility are some of the reasons for not undergoing mammography. Similarly, Salama (2020) reported lack of knowledge about mammography, cultural norms and socio-economic factors were barriers to mammography screening.

Association between respondents' socio-demographic characteristics and breast cancer awareness

Findings from this study revealed that there was a significant association between some of the respondents' socio-demographic characteristics and breast cancer awareness. They include; the proportion of high awareness of breast cancer is more among respondents with postgraduate (61.4%) level of education when compared to tertiary (61.3%), none (54.5%), secondary (50%) and primary (21.4%) at p -value <0.05 . This can be attributed to high level of level of exposure academically ($X^2=9.19$, $P=0.042$). That is, it is believed that the higher the academic qualification, the more the increase in the level of awareness.

Also, there was a high proportion of breast cancer awareness among respondents that were civil servants (far below four-fifth of the respondents) compared to those that were self-employed (nearly three-fifth of the respondents), student/retired/unemployed (nearly three-fifth of the respondents) and traders (above two-fifth of the respondents) at p -value <0.05 . This can be linked to various seminars/awareness on breast cancer that they might have been exposed to. Congruently, a study by Dadzi and Adam, (2019) on assessment of knowledge and practice of breast self-examination among reproductive age women in Akatsi South district of Volta region of Ghana revealed that there was a significant association between participant level of education and knowledge ($\chi^2 = 29.68$, $p = 0.000$). Also, there was significant relationship between the respondents occupation and level of knowledge ($\chi^2 = 12.82$, $p = 0.002$).

Association between respondent's utilization of early breast cancer detection measures and the awareness on breast cancer

This study has noted a significant relationship between utilization and awareness of early breast cancer detection measures contrary to a study by Morse, et al. (2014) on breast cancer knowledge, beliefs, and screening practices among women seeking care at district hospitals in Dares Salaam, Tanzania revealed in relation to respondents' knowledge and practices relative to breast cancer screening and early detection interventions; more than two-fifth. Out of those who had heard of it, one-quarter practised it regularly, about two-fifth practised it occasionally, and just two-fifth never practised it. In addition, a study by Açıkgöz, Çehreli, and Ellidokuz (2015) in relation to Knowledge on breast cancer early diagnosis and screening methods that just about four-fifth of the respondents knew at least one breast cancer early detection and screening method. Below four-fifth affirmed that they had knowledge on BSE, above two-fifth on CBE, more than on breast ultrasound, and three-fifth on mammography. Its

utilization screening rate is low. Lack of knowledge about mammography, cultural norms and socioeconomic factors were barriers. Early diagnosis of breast cancer is critical to reducing the cost of treatments, reducing cancer-related mortality and increases survival rates particularly where radiation, hormonal and chemotherapy are not widely available. Lack of education, absence of family history and poor access to services cannot be left out.

Conclusion

Result showed that majority of the respondents had a high awareness in relation to breast cancer, level of awareness for early detection measures of breast cancer is also relatively high. Consequently, the level of utilization of early breast cancer detection measures is low. Breast cancer being one of the most prevalent cancers universally, can be prevented and treated if detected early. However, its detection is actively dependent of level of awareness of the populace, knowledge of early detection measures and most importantly; translating the knowledge into practice (utilization). it is therefore essential that nurses continue to health educate individuals/clients on the utilization of early detective measures of breast cancer in order to reduce its incidence, especially in low and middle income countries; therefore, reducing the burden of care in the society. It provides important baseline information about breast cancer awareness. Also, such information may be used to develop tailored breast cancer education programmes.

Based on varied level of awareness of breast cancer risk factors and early detection and preventive measures there should be promotion of future health policies, such as mandatory continuing education which involves breast cancer screening, guidelines and general breast cancer awareness Health personnel's should disseminate appropriate information on breast cancer prevention, screening to the public.

Appropriate and socially acceptable awareness programs should be helped established in order to improve awareness and utilization of early detective measures of breast cancer. Strategies should be put in place by governments and appropriate authorities on how to aid smooth translation on the awareness of breast cancer and its early detection measures to the utilization of these measures.

Study Limitation

This study was limited by inadequate recent research litterateurs on the utilization of early breast cancer detective measures.

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