

Awareness and Practice of Self-Breast Examination among Female Health Workers in a Mission Hospital of Sub-Saharan Africa

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Abstract:- Breast cancer is an important global health concern that has a high morbidity and mortality. It is the leading cancer in women worldwide, with increasing incidence in the developing world. Early detection of this condition is vital in ensuring a cure. One of the best ways of ensuring early detection of breast carcinoma in women is through awareness and performance of self-breast examination (SBE). This prospective study aimed to assess the level of awareness and the practice of self-breast examination for breast cancer detection among female health workers in Bowen University Teaching Hospital (BUTH), Ogbomoso, Oyo State. A hundred female health workers in the reproductive age group were recruited into the study. A semi-structured questionnaire was used to obtain the data. The mean age of the participants was 31.30 ± 10.26 yrs, 96% of the participants were aware of self-breast examination as a screening method for breast cancer. However, 41% practice it monthly as it should be done. A lesser proportion of the respondents who are 40 years and above 7.7% have ever had mammograms done. The low practice rate of breast cancer screening methods among female health practitioners in this hospital requires the need for training on the importance and practice of self-breast examination among all the cadres of female health workers to be a better advocate of SBE for the general populace in a developing and low-income country like ours.

Keywords:- Self-breast examination, Breast cancer, Female health workers, Screening.

I. INTRODUCTION

Breast cancer is an important global health concern that has a high morbidity and mortality [1]. It is the leading cancer in women both in the developed and the developing world with the incidence increasing in the developing world due to increased life expectancy, increased urbanization, and adoption of Western culture and lifestyles [2]. Breast cancer has become the most commonly diagnosed cancer exceeding that of lung cancer [3]. Annually, a million females are affected with many women dying of breast cancer in low- and middle-income countries where patients present at the late stage of the disease [1,2,4,5]. An estimated 684,996 deaths from breast cancer occurred in 2020, with a disproportionate number of these deaths occurring in low-

resource settings [6]. This mortality can be prevented/reduced if breast cancer is detected early. The incidence of breast cancer in low- and middle-income countries like Nigeria is increasing as we embrace Western culture [7,8]. The prevalence of breast cancer in Nigeria is 116 cases per 100,000 women per year [1]. The survival rate of patients with breast cancer varies globally, with a higher survival rate seen in the developed countries of the world and this decreases in the middle and low income countries. About 50% of breast cancers are unexplainable, and the cause cannot be ascertained [7]. There are many risk factors for developing breast cancer which include family history of breast cancer, early menarche, late menopause, advancing age, the use of estrogen and progesterone hormonal replacement therapy (HRT), late age of first pregnancy and short durations of breastfeeding or none. Others include obesity, alcohol consumption, and sedentary lifestyles [9].

Different screening methods have been employed to prevent and or reduce the burden of breast cancer. This includes the monthly self-breast examination method, yearly clinical breast examination method, and radiologically through the use of mammography which is the only breast screening procedure that has empirical evidence to have significantly reduced breast carcinoma mortality by about 63% [4].

However, one of the best ways of ensuring early detection of breast carcinoma in women in low-income countries is to be aware of their breasts in terms of how they look and feel under normal circumstances so that women can seek early medical advice if any changes occur in any of their breasts [7].

Self-breast examination (SBE) is the conscious monthly checking of both breasts for any unusual changes such as skin discoloration, thickenings, lumps, or nipple discharge which can be milky or bloody in non-lactating women. Most advanced techniques such as Magnetic Resonance Imaging for early detection are not readily available and affordable to women in most developing countries. SBE has become a widely acceptable routine screening method with the examination having no financial cost and can be conducted in the privacy of one's home. SBE is a simple, quick, and cost-free procedure, which is usually conducted between the 7th and 10th day of the menstrual cycle.

Several studies have observed that the knowledge and practice of self-breast examination as a screening method for breast cancer in the general populace is low due to a lack of awareness [7,10]. This is corroborated by a study carried out among women in some local government areas of a state in the South-Southern part of Nigeria where it was observed that the level of awareness and practice of SBE were less than 50% [11,12]. Another study carried out among market women in the South-Western part of the country observed 37.1% and 18.1% in the awareness and practice of SBE respectively. The level of awareness was observed to be highest among traders that had a tertiary level of education, and this may suggest the importance of educating the community to reduce the mortality and morbidity of breast cancer [13]. A similar study carried out in the Northern part of Nigeria among female undergraduates corroborated the importance of education as the awareness and practice of SBE observed among them was more than 75% respectively.

Recently, there have been reports suggestive of an increased incidence of breast cancer among female health workers in Nigeria hence the need to carry out this study among female health workers. Health workers are vital tools in educating the community about the disease as early detection of breast cancer through these screening methods can help to save lives. This study therefore aims to assess the level of knowledge and the practice of self-breast examination and other screening methods among the female health workers in Bowen University Teaching Hospital Ogbomoso, Nigeria which will guide in instituting appropriate health education strategies that will improve the practice of self-breast examination.

II. LITERATURE REVIEW

Breast cancer is one of the non-communicable diseases that has a high morbidity and mortality [14]. Early detection is the key to effective management of breast cancer as this can help to reduce metastases as well as complications, with the ultimate reduction in morbidity and mortality. This early detection can be achieved through different screening methods which include self-breast examination, clinical breast examination, and mammography which is the mainstay [14,15].

The level of awareness and utilization of these screening methods is observed to be low in many developing countries like ours.

A study carried out in Ethiopia among 358 young women in a tertiary institution observed that about half of the respondents have heard about self-breast examination with a lower number of respondents (13.1%) practicing it [10].

This is like what was obtained in Nigeria by Kayode *et al.* in a study carried out in Ilorin among female secondary school teachers, where it was observed that 95.6% of the respondents had heard about self-breast examination with the mass media (television) as the commonest source of information and the health personnel the least (29.7% vs 4.6%). More than a third of those studied felt SBE should be

carried out monthly while 21.4% felt otherwise and 29.1% did not know how often it should be carried out. More than half of the respondents had done self-breast examination before while 45.2% had not practiced it. The respondents who knew about the examination and are currently practicing SBE are 49.0% [16]. Similarly, another study carried out among female secondary school teachers in Oyo State had 82% awareness of SBE while 62% of them practiced the examination. The mass media accounted for their source of information (55%) [17].

A study done in Zaria, Northwestern part of Nigeria among 221 female undergraduates, showed that 85.1% had knowledge about SBE while 57% of them had practiced it, with 32.2% currently practicing. The mass media accounted for the highest source of information (45.5%) and this was followed by health personnel (21.8%) [1]. Similarly another study observed the mass media (52.1%) and health personnel (18.3%) as the main sources of information about SBE [7]. Another study carried out among female traders by Oladimeji *et al* observed that 61.7% strongly agreed that SBE is a screening method for breast cancer, while the majority of them (70.8%) are not aware of how to perform the self-breast examination, with only 29.2% practicing this examination [5]. Balogun *et al* in another study among female traders in a Southwestern part of Nigeria observed a low awareness and practice of SBE with only 37.1% awareness and 18.1% practice. The level of SBE awareness was observed to be related to the level of education - traders with tertiary education had the highest awareness [18].

A study carried out in three local government areas of Rivers State, Nigeria among 691 women observed that 39.7% knew SBE while 28.9% practiced it. Some of the respondents were aware but did not practice (10.7%). Among those that practice, 3.8% do it weekly, 9.8% monthly, 5.64% every three months, 3.5% yearly and 3.3% do it whenever they remember [12].

Oyinbo *et al* observed in a study that out of 120 medical students in a tertiary institution in Nigeria, about two-thirds (69.2%) of them is aware of SBE while three-quarters of them practiced SBE. The highest level of awareness was observed among the clinical students [19].

A similar trend was observed among the health personnel. A study carried out among 119 female health care providers in Iran which included medical doctors, nurses, and other health personnel had 87.6% awareness of SBE while a lower percentage (72.3%) of them practiced it [20].

A similar study by Akanbi *et al* observed a higher percentage of awareness among the nurses studied but 35.4% practice of SBE (21). Another study observed a higher percentage of awareness of SBE (97%) clinical breast examination (93%) and mammogram (99%) as screening methods among the nurses but a 55.6% and 22% practice of SBE and mammogram respectively [22]. However, Akhigbe *et al* in a study among female health workers in Nigeria, observed that the level of awareness of SBE as a screening method for breast cancer was low (45.8%) and practice of mammogram was 3% [15].

All these studies showed either a low level of awareness or practice of breast screening methods even among health personnel who are to help the community.

III. METHODOLOGY

The study was a descriptive hospital-based cross-sectional study conducted in 2021 among female health workers in Bowen University Teaching Hospital), Ogbomoso, Oyo State, Nigeria which is one of the oldest mission hospitals in Nigeria. The hospital is located in the suburban city of Ogbomoso in the Ogbomoso North local government area of Oyo State, Nigeria. The hospital has a bed capacity of over 400 and the staff population was about 700 out of which females were about 300.

A random systematic sampling method of all eligible consenting individuals was used. Informed consent was obtained from the respondents. Consenting female health workers working in the hospital at the time the study was conducted were included. Female health workers not consenting to participate in the study and those already diagnosed with breast cancer were excluded. Ethical approval was obtained from Bowen University Teaching

Hospital's institutional ethical committee. The study adhered to the tenets of the Declaration of Helsinki for studies on human subjects. A self-administered questionnaire was used as the tool for data collection. Information about their socio-demographic characteristics, knowledge of breast cancer and screening methods for breast cancer as well as the practice of self-breast examination were documented. The data obtained was entered and analyzed using the Statistical Package for Social Sciences software version 23 (SPSS Inc. Chicago, IL, USA.) spreadsheet. The categorical variables such as the age distribution, gender, and sociodemographic characteristics were presented using frequency tables and charts. Test for associations (Chi-square) was used with the level of statistical significance p-value set at ≤ 0.05 and a confidence interval of 95%.

IV. RESULTS

A. Socio-demographic Characteristics

One hundred female health workers were recruited for this study. The majority of the respondents were below the age of 50 years as shown in Table 1 below.

Table 1: Socio-demographic characteristics of participants

Variables	Frequency	Percentage
Age (mean ± SD)	31.30 ± 10.26yrs	
<50yrs	93	93
>50yrs	7	07
Marital status		
Single	44	44
Married	55	55
Widowed	1	01
Educational status		
Tertiary	98	98
Secondary	2	02
Awareness of breast cancer in the family		
Yes	67	67
No	33	33
Positive family history of Breast Ca		
Yes	13	13
No	87	87
Parity		
None	51	51
1-3	47	47
4-6	2	02

More than half (68%) of the participants had a good level of knowledge about Breast Cancer and risk factors as shown in Figure 1 below.

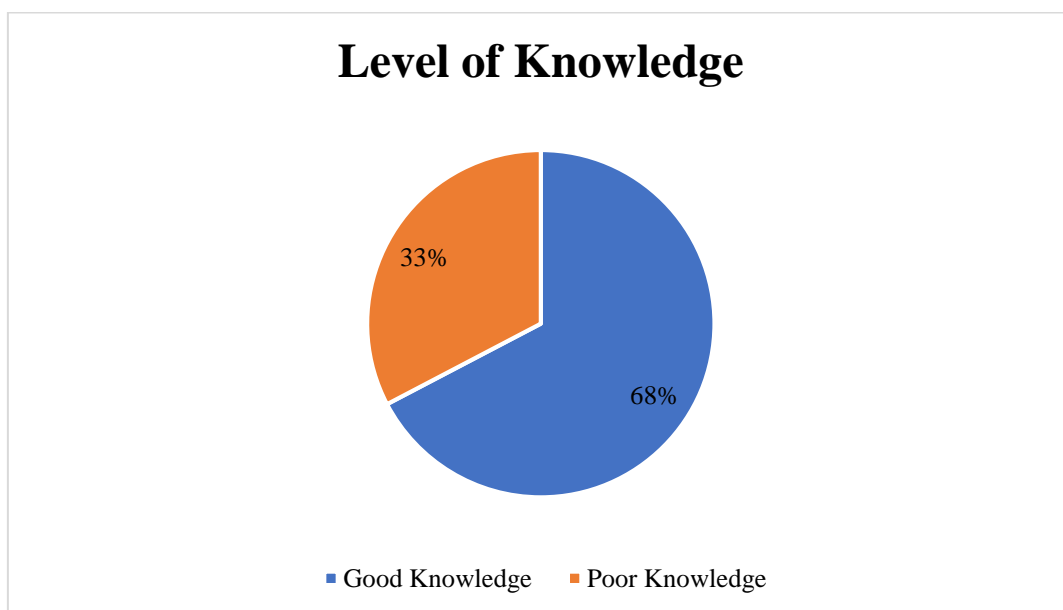


Fig. 1: Level of Knowledge of Breast Cancer among Health Workers.

Good knowledge of breast cancer was highly demonstrated among the medical doctors (92.9%) followed by the nurses (70.3%) while the pharmacists and the

community health extension workers (CHEW) had poor knowledge of breast cancer as shown in Table 2 below.

Table 2: Distribution of Health workers with good knowledge of breast cancer

S/N	Occupation/profession	Total	Good Knowledge	Percentage (%)
1	Medical doctors	14	13	92.9
2	Nurse	64	45	70.3
3	Pharmacist	2	0	0.0
4	Nurse assistant	6	2	33.3
5	Dental Technician	4	1	25.0
6	CHEW	3	0	0.0
7	IT student	5	2	40.0
8	Medical Laboratory Technician	2	2	100

Occupation/Profession, Educational status, and family history of breast cancer among the health workers are factors that show a statistically significant association with

good knowledge of breast cancer as shown in Table 3 below.

Table 3: Factors associated with good knowledge of breast cancer

VARIABLE	Good Knowledge of breast cancer	CHI-SQUARE	P-VALUE (<0.05)
Occupation			
Medical doctors	13	49.250	0.001*
Nurses	45		
Others	5		
Educational status		12.933	0.012
Secondary	0		
Tertiary	66		
Have family members diagnosed with breast cancer?		20.148	0.003*
Yes	11		
No	55		
I don't know	1		

* Statistically significant

Most participants got the information about breast cancer screening methods from health personnel(72%) while friends and family were the least (8%) as shown in Figure 2.

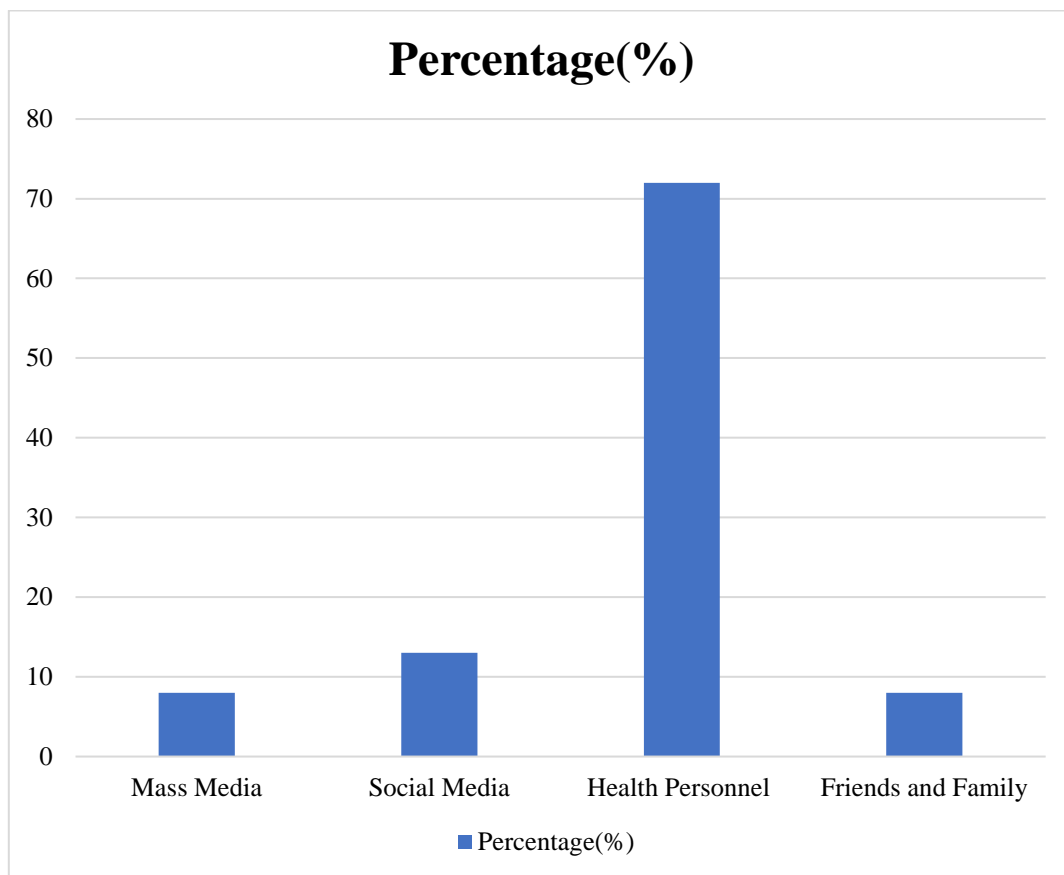


Fig. 2: Sources of Awareness about Breast Cancer Screening Methods

The majority (96%) of the study participants were aware of SBE as a screening method for breast cancer with about half (53%) of them knowing how often they are

expected to carry it out but only 41% of them practice it monthly as shown in Table 4 below.

Table 4: Knowledge and Practice of Self-Breast Examination

Variable	Frequency	Percentage%
Aware of SBE as a screening method		
Yes	96	96
No	1	1
Don't know.	3	3
How often are you expected to do SBE?		
Twice a month	36	36
Monthly	53	53
Bi-monthly	1	1
Quarterly	2	2
Yearly	2	2
I don't know	2	2
How often do you practice it?		
Twice a month	19	19
Monthly	41	41
Bi-monthly	7	7
Quarterly	8	8
Yearly	3	3
I don't know	22	22
Ever detect a breast lump		
Yes	9	
No	91	

Occupation/Profession, Educational status, and family history of breast cancer in participants were not statistically

significant with the practice of self-breast examination in this study as shown in Table 5 below.

Table 5: Factors associated with the practice of self-breast examination

VARIABLE	PRACTICE SBE	CHI-SQUARE	P-VALUE (<0.05)
Occupation		20.738	0.952
Medical doctors	13		
Nurses	52		
Others	15		
Educational status		1.669	0.948
Secondary	1		
Tertiary	78		
History of breast cancer in the family		8.800	0.456
Yes			
No	10		
Don't know	65		
	2		

A significant proportion (74%) of the participants were aware that mammography is a screening method for breast cancer but only 3(7.69%) of the 39 participants that were 40 years and above have had mammography done in the past.

The majority (85%) of the participants were aware that clinical breast examination is a screening method for breast cancer but only 39% of them had it done in the past as shown in Table 6 below.

Table 6: Knowledge of other Breast Cancer Screening Methods and practices

Variable	Frequency	Percentage (%)
Awareness of Mammography as a screening method.		
Yes		
No	74	74
Don't know	12	12
	14	14
Have you had a mammogram done if age > 40 years old?		
Yes	3	
No	36	
Awareness of clinical breast examination as a screening method?		
Yes		
No	85	85
Don't know	8	8
	7	7
Have you had a clinical breast exam in the past?		
Yes	39	39
No	61	61
How often do you practice clinical breast examination?		
Monthly	16	16
Quarterly	5	5
Yearly	14	14
Not at all	65	65

V. DISCUSSION

The knowledge and practice of self-breast examination among female health workers is very important as this knowledge and practice can help individuals detect breast lumps early. Some of these breast lumps may later become cancerous if not detected early causing increased morbidity and mortality.

This study found that more than two-thirds of the study participants had good knowledge of breast cancer which is in tandem with a study carried out in Pradesh among primary healthcare workers which observed that 71% [14] of the respondents had good knowledge of breast cancer and its risk factors. Other studies that showed a similar level of knowledge include Oche *et al*[15] which observed sixty-seven percent, Omotara *et al* [16] in the North Eastern part of Nigeria noted 58.2% and Olowokere *et al*[17] in Ibadan

observed 52.8%. However, Akhigeet *al*[18] in a study carried out in Benin City observed that only 17.5% of their respondents had good knowledge of breast cancer. Similarly other studies carried out in Sokoto(Nigeria) among female workers and Okobia *et al* observed 29.6% and 21.4% respectively [19,20]. Contrary to the above-mentioned studies, Awodele *et al* [21](29) in Lagos and Salaudeen *et al*[22] reported 100% and 97% good knowledge about breast cancer in their studies respectively. The varied differences in the level of good knowledge in these studies may be due to the difference in the location where the studies were carried out. The studies carried out in capital cities/urban settlements where up-to-date information about the disease subject is readily available or where the cohort of people living there are well educated and medically informed (especially among health workers) show a higher level of knowledge about breast cancer. Poor knowledge about breast cancer was noticed in rural regions and the general

populace that is not medically informed. However, the index study was carried out in a sub-urban region and among health workers.

The awareness of self-breast examination as a screening method for breast cancer in this study is over 90%. This is similar to a study carried out in Lagos among nurses by Awodele *et al.* where the same percentage was found [21]. Another study carried out among community-dwelling women in an urban city of Nigeria observed 87.2% [20] while among the primary healthcare providers in Pradesh, 80% was reported [14] and 67.1% among female health workers in Ethiopia [23]. A lower percentage (45.8%) was, however, observed by Akhigbe *et al.* in a study carried out among female healthcare workers [18]. This low level among health personnel as explained by the author is worrisome and this underscores the reason why this study should be localized to guide in instituting a health interventional approach to increase the awareness of self-breast examination in each locality.

However, less than half the population of those aware of self-breast examination practiced it correctly in this study. This is similar to a study carried out by Oche *et al.* [15] where 54% practiced SBE. However, higher values were reported by Odusanya *et al.* [24] among nurses in a general hospital in the South-Western part of Nigeria where 89% of the respondents carried out a self-breast examination, 75% among nurses in Eritrea [25], and a study carried out in Lagos among female health professionals in a tertiary hospital by Nasiru *et al.* [26] where 95% of the respondents practiced SBE. This may be due to differences in the study climates. Lower values were reported by some other studies [1, 12, 20, 27]. This wide gap between awareness and practice of SBE among females and especially health workers who are expected to be advocates of SBE in low-income developing countries like ours requires urgent health educational intervention.

More than 80% of the respondents in this study were aware of clinical breast examination as a screening method for breast cancer, out of which slightly less than half had it done. This was similar to a study with the same awareness and practice level [26]. Some other studies also reported lower levels of annual clinical breast examination practice [20, 24, 25, 27]. This may be due to our cultural background where females avoid exposing their private part of the body to the male gender for clinical examination except when there is a dire need for it.

About three-quarters of the respondents are aware of mammograms as another screening method for breast cancer. This is higher than a study carried out by Mondjila *et al.* [28] with less than 50% awareness of mammograms as a screening method. This study observed that only 7.7% of the respondents aged 40 years and above had a mammogram done. This is similar to findings in other studies done in Nigeria such as by Akhigbe *et al.* [18], 8% by Nasiru *et al.* [26], and 7.8% in Lagos [24]. However, a study reported that none of the participants had ever had a mammogram before [28]. This may be due to the unavailability of the equipment and non-governmental sponsorship/health

insurance coverage of the procedure, with the majority paying out of pocket to have it done.

VI. CONCLUSION

The knowledge about the different screening methods for early detection of breast cancer is excellent among the female health workers in this study as observed in other previous studies conducted both locally and internationally. Good knowledge and correct practice of SBE among health workers are pivotal to detecting breast cancer early which can significantly reduce the morbidity and mortality from it. However, there is a gap between the knowledge and practice of these methods. This may be attributed to the poor attitude of health personnel, lack of adequate motivation, financial constraint, and cultural background of not wanting to expose the private part of the body for clinical breast examination and mammogram especially if it will be done by a male clinician or radiographer respectively.

VII. RECOMMENDATION

- There should be health education targeted at training all female health workers about the practice of self-breast examination which should be done monthly.
- Fee supplementation / governmental policy to assist females above 40 years to have mammograms done.
- Health insurance should increase its coverage with mammography for females 40 years and above included.

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LIMITATION

This study was limited by the mass exodus of health professionals from low-middle income countries to developed countries as many of the female health workers left BUTH and this drastically reduced the number of participants to 100 during the study period.

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