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RESEARCH ARTICLE

KNOWLEDGE AND PRACTICE OF BREAST CANCER SCREENING AND AWARENESS OF ITS RISK FACTORS AMONG WOMEN ATTENDING PRIMARY HEALTHCARE CENTRES IN ILORIN, KWARA STATE, NIGERIA

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ABSTRACT

Background and aim: Breast cancer is the most common cancer among women worldwide including Nigeria with more than two million new cases diagnosed in 2020. Early detection through screening can improve survival and reduce mortality. This study aimed to evaluate the level of knowledge and practice of breast cancer screening and awareness of its risk factors among women attending primary healthcare centres in Ilorin.

Methods: This study was a cross-sectional study conducted in three primary healthcare centres in Ilorin between June and September, 2023 on permission from the Ethics and Research Committee. Four hundred and two consented participants were enrolled into the study. A pretested, validated questionnaire was used to obtain data that assessed the level of knowledge and practice of breast cancer screening methods among participants. Descriptive statistical analyses were employed to represent the frequencies, percentages and tables.

Results: Majority of the respondents, 240 (59.7%) fell into the age group of 21- 40 years, 395 (98.3%) were knowledgeable about breast cancer and 148 (36.8%) were aware that Breast Self- Examination (BSE) and Clinical Breast Examination (CBE) are methods for early breast cancer detection. However, the awareness of mammography was low, 35 (8.7%), and still a smaller proportion 11 (2.5%) have participated in it. A substantial number, 244 (60.7%) have practiced BSE while a smaller proportion 83 (20.6%) had CBE by healthcare providers.

Conclusion: Although the majority of women in this study were aware of breast cancer, the level of knowledge and practice of screening methods was low.

Keywords: Breast self-examination, mammography, Ilorin, women, breast cancer, healthcare centres

INTRODUCTION

Breast cancer is one of the highest occurring malignancies in the world, which, in most cases (70-80%) can be cured if an early diagnosis is made [1]. It is a serious public health concern worldwide, accounting for 12% of all new cancer cases and 25% of all cancers in women [2]. Despite its high prevalence, the practice of early detection remains low, particularly in low and middle-income countries [2]. In Nigeria, the incidence of breast cancer has risen dramatically over the last 10–20 years. This increase is projected to continue in the future [3].

Presently, 1 out of 26 women is expected to be diagnosed with breast cancer in their lifetime, with the majority of cases occurring in premenopausal women [4]. Nigeria, as a developing country, faces similar challenges in breast cancer awareness and screening [2, 5]. The mortality and morbidity rates of breast cancer amongst women are constantly on the rise, and previous studies have concluded that breast cancer screening programmes for early diagnosis and treatment have increased survival rates and prevented recurrence and mortality. Therefore, it is established that mammography, breast self-examination (BSE) and clinical breast examination (CBE), play key roles in early diagnosis [1]. Also, a study found that the prevalence of CBE practice among women in Malaysia was 57.9%, China (76.5%) and India (70.5%) [6]. The mammography practice was as low as 1.4% among Nigerian women [7]. The high prevalence of breast cancer cases can be attributed to ~~a~~ lack of knowledge, and non-practice of breast cancer screening examinations, lack of symptoms at the early stage, lack of accurate information, lack of awareness of the risk factors of the disease, fear, embarrassment, pain, cost, cultural beliefs, insufficient medical facilities and lack of recommendation from health professionals [8, 9].

Many studies have reported low levels of awareness of risk factors for breast cancer among women in different countries. A previous study found that only 28.6% of Saudi women were aware of family history, and only 15.7% were aware of obesity as risk factors for breast cancer [10]. Another research observed that only 32.5% of Nigerian women were aware of age as a risk factor for breast cancer, and only 18.8% were aware of alcohol consumption as a risk factor [11,12]. Early detection of breast cancer through screening can improve survival and reduce mortality [13]. However, many women do not participate in regular screening or are unaware of the risk factors for breast cancer. Breast cancer screening can be performed by different methods, such as clinical breast examination (CBE), mammography, ultrasound, or magnetic resonance imaging.

Thus, this study aimed to evaluate the level of knowledge and practice of breast cancer screening and awareness of risk factors of breast cancer among women attending primary healthcare centres in Ilorin, Kwara State Nigeria.

MATERIALS AND METHODS

***Study sites and design*:** This study was carried out in three Primary Healthcare facilities in Ilorin, Kwara State as follows: Ajikobi Cottage Hospital is located in Ilorin West Local Government Area, Ogidi Health Centre is also situated in Ilorin West Local Government Area while Tanke Primary Health Centre is located in Ilorin South Local Government Area of Kwara State [14]. The

study was conducted between June and September, 2024.

***Study population and sampling procedures*:** The population of women between age 15 and 60 years attending the study facilities. A convenient sampling method based on the availability of patients in the study facilities was used. A total of 402 participants were selected in the three Health Facilities as follows; Ajikobi Cottage Hospital (226), Ogidi Health Centre (82) and Tanke Primary Health Centre (94).

Subject Selection

Inclusion Criteria: 1) Women aged15 to 60 years, 2) Women at risk of breast cancer, 3) All consented women in the facilities studied.

Exclusion Criteria: 1) Women who have been diagnosed to have breast cancer and /or other types of cancers, 2) Hospitalized women**.**

Procedures for data collection

***Study instruments*:** A 49-item comprehensive piloted questionnaire was used to obtain data that assesses the level of knowledge and practice of breast cancer screening and the extent of awareness of the risk factors of breast cancer among participants in the study. The questions were brief and straight to the point enabling easy comprehension and short duration of time taken to fill out each questionnaire (5-7 minutes). The questionnaire was divided into five (5) sections as follows: **Section A**: Demographic information, **Section B**: Knowledge/experience of warning signs of breast cancer/presentation of breast cancer among women, **Section C**: Knowledge about breast cancer screening method/breast cancer awareness and risk perception. **Section D**: Breast cancer screening method awareness and risk factors, **Section E**: Source of information about breast cancer.

Statistical analysis: The data collected were analysed using SPSS version 25 statistical software. Descriptive statistical analyses were used to represent the frequencies, percentages and tables.

***Ethical consideration*:** Ethical approval was obtained from the Kwara State Ministry of Health Ethical Review Committee with the assigned number, MOH/KS/EU/777/820 dated 8th March 2023. Respondents' informed consent was obtained as well. Confidentiality of participants' identities was ensured.

RESULTS

The majority of the respondents fell into the age groups of 21-30 years 117 (29.1%) and 31-40 years 123 (30.6%). Most of the respondents were married 298 (74.0%), while 52 (13.0%) were single and another 52 (13.0%) were divorced/widowed. A large proportion of respondents have completed college of education 234 (58.2%), while a smaller percentage have primary or high school education 45 (11.4%). The majority were employed 354 (88.0%), with a smaller number of students, housewives, and retired individuals (Table 1). A high percentage of respondents 395 (98.3%) were aware of breast cancer, and 148 (36.8%) were aware that BSE and CBE are methods for early breast cancer detection. However, a moderate proportion 226 (56.2%) were not knowledgeable about these methods. Most respondents, 397 (98.8%) were not aware of the recommended starting age for BSE and CBE. Awareness of mammography is relatively low, with only 35 (8.7%) of respondents having heard of it (Table 2).

Table 1: Demographic data of the sample population

Variables	Frequency/ Percentage
Age	
15-20 years	23 (5.8)
21-30 years	117 (29.1)
31-40 years	123 (30.6)
41-50 years	85 (21.1)
51-60 years	54 (13.4)
Marital status	
Divorced/ widow	52 (13.0)
Married	298 (74.0)
Single	52 (13.0)
Level of education	
No formal education	46 (11.4)
Primary school	59 (14.7)
High school	63 (15.7)
College	234 (58.2)
Employment status	
Employed	354 (88.0)
Housewife	17 (4.2)
Retired	9 (2.3)
Students	22 (5.5)

The normal frequency by which CBE should be done is yearly. However, only a very small percentage,7 (1.7%) of the respondents knew the right answer. Almost all of the participants, 389 (96.8%) were ignorant of the recommended age to start mammography diagnosis. Only a negligible number, 8 (1.7%) knew the right age (45 years) to start mammography.

Table 2: Patients' knowledge of breast cancer screening methods

Variables	Frequency/ Percentage
Have you ever heard of breast cancer?	
Yes	395 (98.3)
No	7 (1.7)
Don't know	0
Are you aware of BSE and CBE as methods of early detection of breast cancer?	
Yes	148 (36.8)
No	28 (7.0)
Don't know	226 (56.2)
At what age should BSE start?	
20 years	5 (1.2)
25 years	0
30 years	0
Other	397 (98.8)
How often should BSE be done?	
Yearly	5 (1.3)
Monthly	7 (1.7)
Every 6 months	2 (0.5)
Other	388 (96.5)
Have you heard about CBE?	
Yes	93 (23.2)
No	300 (74.6)
Don't know	9 (2.2)
How often should CBE be done?	
Yearly	7 (1.7)
Every 2 years	0
Every 3 years	0
Other	395 (98.3)
Are you aware of mammography?	
Yes	35 (8.7)
No	357 (88.8)
Don't know	10 (2.5)
What is the recommended age for mammography?	
40 years	0
45 years	8 (2.0)
50 years	5 (1.2)
Others	389 (96.8)

In this study, more than half of the respondents, 229 (56.9%) asserted that oral and injectable contraceptive methods of family planning were risk factors for breast cancer, while one-third, 126 (31.3%) attested that first childbirth after 30 years and one-fifth 89 (22.1%) of the respondents acknowledged that alcohol consumption was a risk factor for breast cancer. Most of the respondents were not aware of unusual risk factors for breast cancer. These include obesity 72 (17.9%), physical activity 64 (15.9), early onset of menses 61 (15.2%), family history of breast cancer 55 (13.7%) and menopause after the age of 55 years 47 (11.7%) (Table 3)

Table 3: Awareness of risk factors of breast cancer among the sample population

Risk factors of breast cancer	Correct answer n (%)	Incorrect answer n (%)
Family history of breast cancer	55 (13.7)	347 (86.3)
Child birth after age 30	126 (31.3)	276 (68.7)
Late menopausal (After age 55)	47 (11.7)	355 (88.3)
Alcohol consumption	89 (22.1)	313 (77.9)
Lack of physical activity	64 (15.9)	338 (84.1)
Oral and injectable family planning methods	229 (56.9)	173 (43.1)
Obesity	72 (17.9)	330 (82.1)
Early onset of menstrual cycle (10 – 11 Years)	61 (15.2)	341 (84.8)

Majority of the respondents 256 (63.7%) were aware of BSE. A substantial percentage 244 (60.7%) have practiced BSE and a smaller proportion 83 (20.6%) have had CBE by healthcare providers. Only 11 (2.5%) of the respondents have had mammograms done. A small number 17 (4.2%) discussed mammography with their doctors. The majority of the study participants accounting for 197 (49.0%) had BSE followed by mammography 47 (11.7%) and CBE 37 (9.2%). (Table 4).

Table 4: Awareness and practice of breast cancer screening methods among the sample population

Variables	Frequency/ Percentage
Have you ever heard of breast self-examination (BSE)?	
Yes	256 (63.7)
No	146 (36.3)
Don't know	0
Have you ever done a breast self-examination (BSE)?	
Yes	244 (60.7)
No	158 (39.3)
Don't know	0
Have you ever had a clinical breast examination (CBE) by a healthcare provider?	
Yes	83 (20.6)
No	319 (79.4)
Don't know	0
Have you ever had a mammography done?	
Yes	11 (2.7)
No	391 (97.3)
Don't know	0
If you haven't had a mammography done, have you discussed it with your doctor?	
Yes	17 (4.2)
No	385 (95.8)
Don't know	0

Have you ever had any breast abnormalities or concerns?	
Yes	58 (14.4)
No	344 (85.6)
Don't know	0
If you have had any breast abnormalities or concerns, did you discuss it with your doctor?	
Yes	28 (7.0)
No	374 (93.0)
Don't know	0
Are you currently experiencing any breast abnormalities or concerns?	
Yes	0
No	402 (100)
Don't know	0
Which of the following breast health examinations have you had in the past?	
Breast self-examination (BSE)	197 (49.0)
Clinical breast examination (CBE)	37 (9.2)
Mammography	47 (11.7)
None of the above	121 (30.1)
Which of the following breast health examinations do you plan to have in the future?	
Breast self-examination (BSE)	214 (53.2)
Clinical breast examination (CBE)	0 (0.0)
Mammography	34 (8.5)
None of the above	51 (12.7)
Don't know	103 (25.8)

Table 5: Sources of information about breast cancer among the sample population

Variables	**Frequency/Percentage (n= 402)**
Electronic media	
Yes	35 (8.7)
No	367 (91.3)
Don't know	0
Friends and relatives	
Yes	213 (53.0)
No	189 (47.0)
Don't know	0
Professional health workers	
Yes	163 (40.5)
No	239 (59.5)
Don't know	0
Print media	
Yes	29 (7.2)
No	373 (92.8)
Don't know	0
Internet	
Yes	39 (9.7)
No	363 (90.3)
Don't know	0
Social media	
Yes	53 (13.2)
No	349 (86.8)
Don't know	0
Television source	
Yes	167 (41.5)

No	235 (58.5)
Don't know	0
Radio Stations	
Yes	167 (41.5)
No	235 (58.5)
Don't know	0
Teachers	
Yes	88 (21.9)
No	314 (78.1)
Don't know	0

Friends and relatives accounting for 213 (53.0%) were the most common sources of information on breast cancer screening among the respondents studied, followed by Television source 167 (41.5%) and radio stations 167 (41.5%), professional health workers 163 (40.5%), teachers 88 (21.9%) and social media accounting for 53 (13.2%) (Table 5).

DISCUSSION

The majority of the respondents fell into the age groups of 21-30 years and 31-40 years. The findings of these studies are in line with previous studies in Kashmir [1] and Nigeria [15]. A large proportion of respondents have completed secondary education. The majority were employed with a relatively low percentage of respondents having a family history of breast cancer. A previous study in Ghana shared similar views [16].

Breast cancer screening knowledge, attitudes, and practices among female health professionals in Riyadh, Saudi Arabia, was found to be less common than anticipated, according to a cross-sectional study [17]. A research study recommended that to empower healthcare professionals to transmit knowledge and have a good impact on the attitudes of female hospital patients, proactive actions must be taken to design educational programs for the staff [18]. Despite recent developments in medicine, it was observed in this study that most of the respondents were unaware of known cancer risk factors and warning indicators. This was in upkeep with the previous work in India that almost half of their studied population had poor knowledge and while another study indicated 85.2% of subjects with low level of knowledge of risk factors for breast cancer [1]. The findings imply that the public education tactics being used today need to be updated [19]. However, another study in Saudi Arabia had contrary results where all the participants showed sufficient knowledge about the risk factors [20].

For early detection through screening and treatment of the precancerous lesion, knowledge of the risk factors for cancer and its preventive features is crucial [21]. According to the current survey, a large majority of respondents (98.3%) had heard of breast cancer, demonstrating good general awareness. The findings of this study run counter to those of studies conducted in South-west Nigeria and Ethiopia [22, 23]. Those studies found that women were less concerned about breast cancer and had inadequate knowledge of it and that 90.3% of people had poor knowledge of breast cancer. The knowledge of BSE and CBE as early breast cancer screening techniques is about 37% among responders. Although a sizable portion (56.5%) is unaware of these techniques, this figure is significantly higher than that reported in a study among women in South-west Ethiopia (44%) [24], among university female students in Bangladesh (33%) [25], and significantly lower (80%) than that reported by another study [26]. The fact that the majority of respondents were unaware of the suggested beginning age and

frequency for BSE and CBE indicates a knowledge gap. Only 8.5% of respondents indicated that they were aware of mammography, which indicates a poor level of awareness. This is consistent with a study conducted in Ethiopia which found that only (17%) of the participants had heard about mammography [27]. In addition, a study observed that female patients at a teaching hospital in Lagos, Nigeria, had a relatively low level of awareness regarding mammography and mammographic screening [28, 29].

The majority of respondents in this study were aware of breast self-examination (BSE). In a survey of female secondary school students in Osogbo, Western Nigeria, it was found that a higher percentage of participants (97.5%) had heard of breast cancer but had insufficient awareness of the BSE's proper techniques. In line with this, 64.1% of the participants in Ugandan universities were aware of the BSE technique. A sizable portion (60.8%) of the population has performed BSE, which is encouraging [30]. However, this figure is considerably lower than that reported (76.7%) in the study among female undergraduates in South-Eastern Nigeria [31], although it is still higher than the population's reported rate of (45.8%) [22] and 52.9% [20]. We discovered that fewer people (20.3%) received clinical breast examinations performed by healthcare professionals, which is significantly less than the 4.6% [21]. Only 2.5 percent of those surveyed have had mammograms. Four percent of people brought up mammography with their doctors.

The most popular information sources are friends and family followed by radio stations, television source, medical professionals, and the internet. Considering that just a small portion of respondents rely on these sources, they have a relatively low level of effect. Out of the total respondents, 21.5 percent specifically listed instructors as information sources. This study's findings regarding the prevalence of information sources were not comparable to previous research work which showed the most common sources mentioned by the participants were radio stations (40%), health workers (30%), and schools (10%). Other information sources for breast cancer included friends (8%), neighbors (7%), and books/the internet (5%) [32].

CONCLUSION

A high percentage of respondents had heard of breast cancer. Additionally, awareness of mammography was low. Most of the respondents asserted that oral and injectable contraceptive methods of family planning were risk factors for breast cancer. Among the various sources of information about breast cancer, television and radio stations are the most commonly utilised.

Conflict of interest

The authors declare no conflict of interest.

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