Breast Self-Examination: Knowledge and Practice Among Female Secondary School Students in Delta State, Nigeria

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Abstract

Breast self-examination (BSE) is a preventive tool for early identification of breast changes and abnormalities. This study was aimed at assessing breast self-examination knowledge and practice among female secondary students in Delta State, Nigeria. This descriptive cross-sectional study was carried out among female senior secondary school students from selected public schools in Delta State, Nigeria. This study utilized a self-administered 59-item validated questionnaire for data collection from 216 consenting female students who volunteered to take part in the study. The knowledge and practice of breast self-examination were measured on 33 and 18 points reference scales, respectively. Data were analyzed using SPSS version 23.0. Frequency, mean, standard deviation and correlation analysis were reported. All statistical tests were at 5% level of significance.

The mean age of the respondents was 15.5 ± 1.11 years. The mean score for knowledge of BSE was 5.8 ± 3.8 while the mean score for BSE practice was 7.3 ± 2.1 . Correlation analysis showed no significant relationship between knowledge and practice of BSE (p=0.095, R=0.114). The overall knowledge and practice of BSE was very poor. This calls for the need to improve breast self-examination advocacy among the adolescents; training and intervention programs to improve their knowledge as well as the regular practice of BSE.

Keywords: adolescents, Breast self-examination knowledge, Breast self-examination practice, Delta State, female secondary school students, Nigeria.

Introduction

Breast Self-Examination (BSE) involves both visual inspection and manual palpation of the breast. The aim is to detect breast abnormalities and changes early to enhance prompt medical attention and treatment. These breast changes and lumps may be benign or malignant. The methods and tools for generally assessing the breast include breast selfexamination (BSE), clinical breast examination (CBE) and mammography [1, 2, 3, 4, 5]. Other tools include magnetic resonance imaging (MRI) and digital breast tomosynthesis [6]. John Hopkins breast center Stated that [7], 40% of diagnosed breast cancers are detected by women who feel a lump in their breast. This may mean that BSE is an important tool that makes a woman to be 'breast aware' [3, 6].

Breast self-examination is simple, easy to perform private, convenient, cost-effective and does not require the use of special equipment [4, 8, 9]. It is recommended that BSE should begin from 20 years of age [10, 11]. However, it has also been advocated that BSE should commence earlier, starting from puberty and to continue throughout lifetime [12].

In developing countries where mammography is not readily available and clinical breast examination is not routinely done, breast self-examination remains the best option for women of all ages. Additionally, the adolescent breast has dense tissues which limit its sensitivity to mammography [4, 13, 14].

The practice of BSE varies from country to country, from region to region, and among women of different levels of educational status. The practice of breast-self-examination has been reported to range from 19% to 43.2% in Nigeria [15, 16].

The World Health Organization defines individuals in 10-19 years age group as adolescents and the majority of secondary school students fall within this age group. The adolescent age is a transitory period from childhood to adulthood. It is associated with bodily changes, development of secondary sexual characteristics, including the breast.

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Promotion of positive preventive health behavior like BSE during this period may yield results that are carried on to adulthood. This is pertinent since the trend of development of breast abnormalities including breast cancer is increasing in females below 30 years of age [17, 18, 19, 20].

There are documented reports on BSE among women in the general population, but there are no previous reported studies on BSE among the female secondary school students in Delta state, more so that a previous study reported that benign breast tumor is common among the adolescent age group in this environment [18]. Hence the need to assess breast self-examination knowledge and practice among the female secondary school students in Delta State.

Establishing baseline knowledge and practice of BSE among this group of students will provide information for designing intervention programs to improve breast health and BSE skills among them and enhance policy making regarding the adolescent's health.

General Objectives

To assess the level of knowledge and practice of breast self-examination among female secondary school students in Delta State, Nigeria.

Specific Objectives

- 1. To determine the level of knowledge of the students on breast self-examination.
- 2. To determine the level of practice of breast self-examination among the students.
- 3. To determine if a relationship exists between the student's knowledge and Practice of BSE.

Materials and Methods

Study Design

This was a descriptive cross-sectional study carried out among female Senior Secondary School Two (SS2) students in public schools in Delta State, Nigeria.

Study Area

Two secondary schools were randomly selected from two local government areas in Delta State located in the South-South geopolitical zone of Nigeria. Ekpan secondary school was selected from Uvwie local government area and the other, Hussey College from Warri-South local government area. Uvwie is a gateway town in and out of the city of Warri. Warri-South local government area is predominantly riverine, and it is the commercial nerve center of the state. Both local government areas have several private and public secondary schools. Hussey College is one of the oldest and most prestigious colleges in the local government.

Study Population

The study population included female Senior Secondary Schools two (SS2) students of the selected schools. Other senior classes, SS1 and SS3 were excluded from participating. SS3 students were not allowed to participate because they were preparing for their school leaving examinations. The schools were randomly selected from the list of public schools in the two local government areas. Participation in this study was voluntary. Volunteers were obtained from all the arms of SS2 in the selected schools and only female SS2 students who were present in the school at the time of the study were allowed to participate in the study.

Sample size Determination and Sampling Procedures

The sample size calculation was adapted from Leslie-Kish formula.

$$\frac{(Z\alpha + Z\beta)^2 x (p x q)}{d^2}$$

The sample size (n) was calculated based on the following assumptions: $Z\alpha$ = Normal standard deviant at 95% confidence interval (1.96), $Z\beta$ = Power at 80% (0.84), q= (1-P) where P= proportion of breast self-examination = 50%, d= level of Precision (0.1). The Calculated sample size was 196. After applying the 10% attrition rate, the final sample size was 216.

Instrumentation

n =

The instrument for data collection for this study was a semi-structured self-administered questionnaire. The questionnaire was divided into three sections with 59 items. The 59 items were a mixture of multiple-choice questions and questions with categorical variables (yes/no/I don't know). Section A consisted of questions on the social demographic characteristics of the participants; Section B consisted of questions on knowledge of BSE (39 items) and Section C consist of questions on breast self- examination practice (15 items). Face and content validity was achieved by seeking opinions of experts in the field of Public health and Health promotion. The pilot-tested was instrument for its comprehensibly and clarity among а convenience sample of SS2 students from a non-participating school, who represent 10% of the of the calculated sample size. Modification of the questionnaire was however carried out based on the outcome of the pilot-testing before using it for final data collection. The overall reliability score (Cronbach alpha) was 0.74.

Measurement

The respondents' knowledge score is measured on point rating scale with one point assigned to a correct answer and zero assigned to an incorrect answer. Participants who scored less than 50% of the knowledge questions were considered as having poor knowledge. Participants who scored between 50% and 75% were considered as average knowledge, and those who scored greater than 75% were classified as having good knowledge. The same was applied to the practice of breast selfexamination. The scores were grouped into poor practice, and good practice. Scores below 50% was grouped as poor practice while scores above 50% was grouped as good practice.

Ethical Consideration

Approval for the study was obtained from Babcock University Research and Ethics committee (reference number BUHREC036/20), the Chief Inspector of Education for Uvwie and Warri South local government area, as well as the principals of the participating schools. Informed consent was also obtained from the students.

Data collection procedure

Data was collected using self-administered questionnaire. This was achieved after the aim of the study was explained to the respondents and informed consent obtained from them, Confidentiality of information and anonymity was maintained.

Data Analysis

The data collected were entered into a personal computer and analyzed using the Statistical Package for the Social Sciences (SPSS) for Windows, version 23.0. Descriptive statistics (frequency distributions) for demographic characteristics; responses of the respondents, means and standard deviations were transformed into weighed aggregate scores. Correlational analysis between knowledge level of breast self-examination and breast self-examination practice were measured using Pearson Correlation. Significant level was set at p<0.05 for all statistical analysis.

Results

A total of 216 students participated in this study, and the response rate was 100%.

Socio-demographic Characteristics of the Participants

The socio-demographic characteristics of the students include their age, class, tribe, marital status and religion. The mean age for the respondents in the study was 15.5 ± 1.11 years. Most of the respondents were between 15 years and 16 years old (Table 1). Majority, 72 (33.3%), were 16 years and 68 (31.5%) were 15 years old. All the respondents 216 (100%) were females in SS2 class. Majority 69 (31.9%) were Urhobo by tribe followed by Ibo 28(13%), Itsekiri 25(11.6%), Isoko 21(9.7%), Ijaw 19(8.8% and Okpe 14(6.5%). Other tribes accounted for 40(18.5%) of the respondents. All the respondents 216 (100%) were single and 212 (98.1%) of them were Christians.

Knowledge of Breast Self-Examination

Knowledge of breast self-examination was measured on a 33-point reference scale and the mean score was 5.8 ± 3.8 (Table 2). Ninety-three (43.1%) of the respondents have heard of breast self-examination. Thirty-four (15.7%) heard of it from the internet, 32 (14.8%) from mother, and 30 (13.9%) from school. Just a few of the respondents 83(38.4%) knew the meaning of breast self-examination. Forty-seven (21.8%) respondents indicated that they have had previous training on BSE. Ninety-two (42.6%) respondents asserted that they do not know the age BSE should commence and more than half of the respondents, 182 (84.2%), did not know that BSE is done monthly. Regarding the positions taken during BSE, only 35 (16.4%) respondents knew that it can be performed in a lying down position while only 4 (17.1%) knew it can be done standing in front of a mirror. Many of the respondents, 179 (82.8%), do not know that the pads of the three middle fingers are used when examining the breast. Overall, 168 (77.7%) respondents do not know the positions taken while performing BSE.

Variables	Respondents in the study (N=216)		
	Frequency (N=216)	Percentage (%)	
Age			
13 years	1	0.5	
14 years	31	14.4	
15 years	68	31.5	
16 years	72	33.3	
17 years	32	14.8	
18years	10	4.6	
19years	2	0.9	
Gender			
Male	00	0.00	
Female	216	100	
Tribe	"		
Ibo	28	13.0	
Ijaw	19	8.8	
Itsekiri	25	11.6	
Urhobo	69	31.9	
Isoko	21	9.7	
Okpe	14	6.5	
Others	40	18.5	
Marital Status	"		
Single	216	100	
Married	00	0.00	
Religion			
Christian	212	98.1	
Muslim	4	1.9	
Academic level			
SS2	216	100	
Others	00	0.00	

Table 1. Socio-Demographic Characteristics of the Respondents

Table 2. Summary of Mean Scores

Variables	Respondents in the study (N= 216)		
	Rating Scale	Mean	SD
Level of knowledge of BSE	33	5.8	3.8
Level of BSE Practice	18	7.3	2.1



Figure 1. Knowledge of Breast Self-Examination (n=216)



Figure 2. Practice of Breast Self-Examination (n=216)

Practice of Breast Self-Examination

The practice of breast self-examination was measured on 18 points reference scale. The mean score was 7.3 ± 2.1 (Table 2) with 77% of the participants having poor practice of BSE (Fig 2). One hundred and eighty-nine (87.5%) respondents have never performed a BSE while only 27 (12.5%) of the respondents have ever performed BSE. Seven (3.2%) respondents perform BSE monthly, while 12 (5.6%) perform BSE anytime. Furthermore, only 8 (2.8%) perform after their mensuration.

Though the practice was poor, the respondents gave reasons for engaging in BSE practice. Eighteen (8.3%) said they are aware of the benefits, 22 (10.2%) 'to avoid being diagnosed with breast cancer', 19 (8.8%) 'Knew someone with breast cancer', 19 (8.8%) 'to avoid the breast being cut off' and 20 (9.25%) have of a family history of breast cancer. The most common reasons given by the

respondents (186; 86.1%) for not engaging in BSE was 'I do not know how to do it', fourteen (6.6%) said they never knew about BSE, 32 (14.8%) forgetfulness and 21 (9.7%) do not want to be diagnosed as having breast cancer. Additional reasons given for not engaging in BSE practice include: 'I am not at risk of breast cancer or breast problems, I am not up to the age of doing BSE, I do not feel comfortable touching my breast and it is time-consuming'.

Correlation analysis was done to determine if there was any relationship between the level of knowledge of breast self-examination and the practice of breast self-examination. From the analysis, there was a positive relationship, but there was insufficient statistical evidence to conclude that there was significant relationship between the variables (p=0.095, R= 0.114).

Discussion

Breast self-examination is the simplest and safest way of identifying breast abnormalities

early, and quickest way of getting familiar with one's own with regular practice. This is of great importance to the adolescent female who has limited options of breast screening tools.

The results obtained from the study showed that the level of knowledge of breast selfexamination and practice of breast selfexamination were poor. This indeed did not come as a surprise, though not welcoming because many females in this age group do not pay particular attention to their breast health and this is not included in their school curriculum.

More than 80% of the respondents scored below the mean score for the level of knowledge of BSE, and the practice of breast self-examination followed same with 76.9% of them having poor practice. Only 3.2% of respondent practice BSE monthly. The result is not totally different from that reported from similar studies across Nigeria, from different states using a similar group of senior secondary school students. They reported both poor knowledge and practice of BSE as it is the case with the present study [17, 21, 22, 23, 24, 25].

Similar findings have been reported among high school students outside Nigeria [26]. This problem is, therefore, not peculiar to Nigerian adolescents. This is because less emphasis is placed on breast health among the secondary school students, but more efforts seem to be directed towards older women. It should be remembered that both groups of women (the older women and the younger female secondary school students) are vulnerable to developing diseases of the breast including breast cancer though too common in the younger age group. Efforts should therefore be made to target this group of adolescents early with adequate knowledge and require skills in performing breast examination.

Lack of knowledge as to when and how BSE should be done were the most popular reasons cited by 86.1% of the respondents, as reasons for not practicing BSE. This can be said to be responsible for the poor practice of BSE among the respondents. This corroborates other similar studies [17, 22, 27].

Knowledge is antecedent to practice. It is the steppingstone to good practice and adoption of healthy behavior. Other reasons highlighted by the respondents that may also have accounted for the poor practice include perception of "not being at risk" and "not up to the age" of commencing BSE. This is the more reason why enlightenment and training about BSE should commence early in order to guide them and erase misconceptions they may have about BSE.

Students will benefit from inclusion of topics on breast health into their regular school curricula just as it with reproductive health. They need to know that being a woman is a risk factor for breast diseases, including breast cancer. There are previous reports of young females diagnosed with breast cancer between the ages of 14-16 years (Banjo, 2004). From the present study, just a few (8.3%) respondents examine their breasts because they are aware of the benefits of doing so. This makes it essential for young females to be told about the benefits and limitations of BSE early so they can make an informed decision as to whether they want to adopt this practice.

Hearing about BSE does not translate into knowledge and practice as observed in this study where less than 50% of the respondents (43.1%) have heard about BSE and yet the majority of those who have heard of BSE do not practice BSE. This outcome was found not to be too different from studies reported from Osun (58.8%) and 55.2% in Anambra State in Nigeria [17, 20]. Among the Turkish students, a small percentage of them (37.9%) were reported to have heard of BSE. The level of knowledge of BSE and practice of BSE among them were also reported as being poor. This invariably suggests that hearing or passing information is not enough. There is the need to engage the students, during the adolescent age, through continuous learning and practice in order to ensure adherence to BSE. This habit is expected to be carried on to adulthood. Educating young females early from the secondary school on breast self-examination and ensuring monthly and regular practice of BSE will have a greater and positive impact on the society, the family (sisters and mothers), friends and colleagues, in identifying breast abnormalities and preventing delay and late presentation in the hospital.

Conclusion

Considering the outcome of this study, there is the need to step up intervention programs to improve the knowledge of females in secondary school on breast health and preventive health practices regarding the breast. They seem to be the "neglected group" when it comes to issues of breast health. Though they are not likely to develop breast cancer at this age, they are at risk and are vulnerable to developing several breast abnormalities, including breast cancer. Therefore, empowering them with adequate knowledge and necessary skills to perform BSE will go a long way in securing their life and reducing morbidity and mortalities associated with breast diseases.

Recommendations

Breast health should be included in the secondary school curriculum covering different topics on the female breast. Teaching of BSE should be intensified beginning at this level, emphasizing the benefits and limitations of BSE.

Intervention programs, health talk, workshops and seminars should be organized from time to time for these students, for a continuous update of knowledge on issues related to female breast health.

The different platforms of social media can be used to disseminate information on BSE to the public. In addition, training of peer educators in schools should be encouraged to involve the female teachers and students. This will help to ensure sustainability and continuous practice.

Strength of the study

The questionnaire was worded in simple language, easy to understand by the respondents.

Limitation

The study respondents were all from public schools and in senior secondary school two. This may affect the generalization of this study to the entire female secondary school students in the state.

Conflict of Interests

The author declares that there is no conflict of interest.

Acknowledgement

The authors acknowledge the Chief Inspector of Education of the local government areas where the study took place, the principals, coordinating teachers of SS2 and all the students who took part in the study.

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