Original Article

# Knowledge and Awareness of Breast Cancer among Rural Women in Umuowa Orlu Local Government Area Imo State, South East, Nigeria

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**Abstract**

**Background:** Many women with breast cancer present at the health institutions with advanced multiple nodal involvements have poor prognostic outcome. Knowledge and awareness of breast cancer may promote health-seeking behavior, thus early diagnosis and increased survival rate of breast cancer cases. The objective of this study was to assess the level of knowledge and awareness of women on breast self-examination (BSE) in Umuowa, which would guide future intervention program on breast cancer prevention and control in the community. **Method:** Descriptive survey design with the aid of a questionnaire served as an interview schedule for the study on 349 Women in Umuoawa, Orlu Local Government Area (LGA) of Imo State. Descriptive and inferential analysis was done using Statistical Package for Social Sciences. **Results:** The main outcome measure was the level of awareness on breast cancer. With a Pearson's correlation coefficient ($R$) of 0.569 and a Spearman's rank correlation coefficient ($r$) of 0.600 and a $P$ value of $0.000 < 0.05$, a correlation between educational attainment and BSE awareness was established. The correlation coefficient being positive, the result showed that with increase in educational attainment, the awareness of BSE increased and vice versa. Thus, there was a positive relationship between educational attainment and the awareness of BSE. One hundred and four (29.8%) respondents showed that breast cancer is an illness caused by ancestral forces. Their knowledge of the risks factors for breast cancer was also low. Their major source of information on breast cancer was through health care providers followed by friends/relatives. **Conclusion:** There is a need to scale up health education programs to remove myths regarding breast cancer and improve health-seeking behavior among the rural women.

**Keywords:** *Awareness, breast cancer, screening, rural women, health education*

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## Introduction

Breast cancer is the commonest cancer and remains the most lethal malignancy in women across the world.[1] It constitutes a major public health issue globally with over 1 million new cases diagnosed annually, resulting in 1.67 million deaths and about 4.4 million women living with the diseases. [2,3] In Nigeria, the number of women at risk for breast cancer increase steadily from approximately 24.5 million in 1900 to approximately 40 million in 2010 and is projected to rise to over 50 million by 2020.[4] In the present scenario, roughly one in 26 women are expected to be diagnosed with breast cancer in their life time, majority of cases occurring in premenopausal women.[1] Cancer has become a major source of morbidity and mortality globally. Data collected from two population-based cancer registries in Nigeria, the Ibadan population-based Cancer Registry (IBCR) and the Abuja population-based Cancer Registry (ABCR) covering a 2-year period 2009–2010, revealed that a total of 3393 cancer cases were registered by the IBCR, whereas during the same period 1128 invasive cancers were reported by ABCR. For women, mean age at diagnosis of all cancers in Ibadan and Abuja were 49.1 and 45.4, respectively. Breast and cervical cancers were the commonest among women.[5] Based on hospital records in Eastern Nigeria,

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breast cancer comprised 30% of all patients with breast disease with male: female ratio of 1:67. Sixty-four (64%) had advanced disease on presentation (Manchester III and IV). Only 7% of the women were presented within 1 month of detection of symptoms, whereas 7% waited longer than 1 year.[6] The high mortality was reported to be the result of late presentation at advanced stage with poorer clinical and pathological prognostic outcome. Majority of women present with advanced stages of the disease at which time little or no benefit could be derived from any form of therapy.

The low survival rates of breast cancer in less developed countries can be attributed to lack of early detection and inadequate diagnosis as well as treatment facilities. Oluwatosin[7] asserted that late presentation of breast cancer patients suggests that women in Nigeria have poor knowledge of the disease. Studies in sub-Saharan Africa have also shown scant knowledge about the disease and delayed women's interpretation of bodily changes as being abnormal.[8,9] For women to present early, they need to be aware about the disease and must be able to recognize symptoms of breast cancer through routine practice. Poor knowledge about breast cancer symptoms delays early diagnosis. Women in the rural areas are the most vulnerable group and are the poorly informed individuals. This lack of knowledge can affect them, if necessary actions are not taken. Reaching out to them at the grass root level will help in early detection through proper health teaching on breast changes. The study was conducted to empirically ascertain the level of knowledge and awareness of breast cancer among women in Umuowa community, which would guide future intervention program on breast cancer prevention and control in the community.

## Material and Methods

This is a descriptive survey on breast cancer awareness among women in Umuowa, Orlu Local Government Area of Imo State. Umuowa, a rural community, was purposively selected for the study. The total population of Orlu LGA is 142,717: 67,372 men and 75,345 women whereas the population of Umuowa is 7339 according to the National Population Census of 2006.[10] The target population of study was women aged 20-70 years, which was 3850 according to Umuowa Women Association Register of 2015. A sample size of 349 women from the community participated in the study. This was calculated using Krejice and Morgan[11] power analysis formula: $S = X^2\ NP(1\text{-}P)/d^2(N - 1) + X^2P\ (1\text{-}P)$. Umuowa has 10 villages and all were purposefully included the study. The sample size was proportionally allocated to each village using proportional sampling technique. To reach each respondent, household sampling technique was used. Systematic sampling technique was used to locate the houses in each village. Every 11th household was considered for sampling interval. Using simple random sampling method, the first household which was the fifth household was selected and used as the starting point. The women in each of the household that met the inclusion criteria were selected based on their willingness to participate. Ethical approval was obtained from the ethical committee of the University of Nigeria Teaching Hospital and from each participant. Instrument for data collection was a questionnaire, which served as an interview schedule. The questionnaire that was constructed from literature based on the objectives of the study was given to experts in the field of gynecology, measurement and evaluation, and community nursing to evaluate the relevance of content and clarity of statement. The interview schedule consisted of two sections: A and B. Section A consisted of questions that dealt with the demographic characteristics of the respondents, whereas section B dealt with questions on breast cancer awareness and knowledge. The responses to the questions on breast cancer awareness were scored and rated as follows:

Low awareness: <10

Moderate awareness: 11–20

High awareness: >20

The instrument was pilot tested at Owerre-Ebeiri where the questionnaire was administered on 40 women and necessary corrections were made thereafter. The questions were both in English and Igbo languages. The English version was translated into Igbo language by Igbo language experts. The translated Igbo version was again given to another expert in Igbo language to re-translate into English. This was done to ensure the consistency and accuracy in the Igbo version of the questionnaire.

Data were collected with the assistance of three research assistants. The questionnaire, which was interview administered, was filled for every woman, in the 11th household, who is within the age limit and gave consent to participate, until the required sample was received.

The data generated from the instrument were analyzed with the aid of statistical package for IBM Corp. USA. Item-by-item analysis was carried out to show response frequency and percentages of various categories of data generated from the research instrument. Hypotheses were tested using parametric test.

## Results

### Demographic Variables

The respondents who were within the age range of (20-30 years) constituted 105 (30.1%), whereas those who were within the ages 51-60 years were the least in number

38 (10.5%). Majority of the respondents, 183 (52.4%), were married, whereas 88 (25.2%) were single. They were predominantly Christians 343 (98.3%), whereas 3 (0.9%) were traditional worshipers. One hundred and twenty nine (37.0%) had tertiary education and only 15 (4.3%) had no formal education. Ninety-six (27.5%) were civil servants, whereas 52 (14.9%), 46 (13.2%), and 39 (11.2%) were farmers, traders, and business women, respectively [Table 1].

**Table 1: Demographic characteristics of respondents (*n* = 349)**

| | | Frequency | Percentage |
|---|---|---|---|
| Age | 20–30 | 105 | 30.1 |
| | 31–40 | 67 | 19.2 |
| | 41– 50 | 55 | 15.7 |
| | 51-60 | 38 | 10.9 |
| | 61and above | 84 | 24.1 |
| | Total | 349 | 100.0 |
| Marital status | Single | 88 | 25.2 |
| | Married | 183 | 52.4 |
| | Divorced | 16 | 4.6 |
| | Widowed | 51 | 14.6 |
| | Separated | 11 | 3.2 |
| | Total | 349 | 100.0 |
| Educational qualification | No formal education | 15 | 4.3 |
| | Primary education | 79 | 22.6 |
| | Secondary education | 121 | 34.7 |
| | Tertiary education | 129 | 37.0 |
| | Others | 5 | 1.4 |
| | Total | 349 | 100.0 |
| Parity | None | 102 | 29.2 |
| | [1] Only | 53 | 15.2 |
| | 2–3 | 108 | 30.9 |
| | 4 – 5 | 52 | 15.0 |
| | 6 and above | 34 | 9.7 |
| | Total | 349 | 100.0 |
| | Total | | |
| Occupation | Civil servant | 96 | 27.5 |
| | Farmer | 52 | 14.9 |
| | Trader | 46 | 13.2 |
| | Business woman | 39 | 11.2 |
| | Full housewife | 27 | 7.7 |
| | Seamstress | 19 | 5.4 |
| | Others (Cleaners) | 70 | 20.1 |
| | Total | 349 | 100.0 |
| Religion | Christianity | 343 | 98.3 |
| | Islam | 1 | 0.3 |
| | Traditional religion | 3 | 0.8 |
| | Others | 2 | .6 |
| | Total | 349 | 100.0 |

## Breast Cancer Awareness

Two hundred and forty three (69.6%) have heard of breast cancer, 104 (29.8%) have not, whereas 2 (0.6%) do not know; 183 (52.4%) have not seen any case of breast cancer, whereas 166 (47.6%) have. Awareness level of respondents with less than secondary school education was low. High level of awareness was 41 (31.8%) for participants with tertiary education, and 0 (0.0%) for participants with primary school education [Table 2].

## Breast Cancer Knowledge

Table 3 shows responses on knowledge of breast cancer. Responses on ways of detecting breast cancer were as follows: 192 (55.0%) acknowledged breast self-examination (BSE), 213 (61.66) acknowledged clinical breast examination (CBE), 104 (29.8%) acknowledged mammogram, whereas 82 (25.5%), 99 (28.4%), and 71 (20.3%) acknowledged breast biopsy, ultrasound, and magnetic resonance imaging, respectively.

Responses on the meaning of breast cancer were as follows: 170 (48.7%) of the respondents noted that breast cancer is abnormal growth of tissue in the breast that may cause enlargement of the breast, thickening of the breasts, and soreness. One hundred and four (29.8%) understood breast cancer to be an illness that is caused by ancestral causes. Eighty- nine (25.5%) said breast cancer is a disease that runs in one's family. One hundred and fourteen (32.7%) understood breast cancer to be a lump in the breast, whereas 84 (24.1%) said breast cancer is a discharge in the breast.

Responses on manifestations/symptoms of breast cancer: 203 (58.2%) identified breast lump as a manifestation of breast cancer, 181 (51.9%) identified swelling while 143 (41.0%), 133 (38.2%), 152 (43.6%), 154 (44.1%), and 108 (30.9%) identified soreness, redness, breast discharge, unusual pain, and nipple aversion/dimpling as manifestations of breast cancer, respectively. Only 132 (37.8%) identified thickening, scaling, and erosion of the nipple and areola, whereas 152 (43.6%) identified

**Table 2: Cross-tabulation between educational attainment and BSE awareness**

| Educational qualification | Awareness of BSE | | |
|---|---|---|---|
| | Low (%) | Moderate (%) | High (%) |
| Primary education | 75 (94.9) | 4 (5.1) | 0 (0.0) |
| Secondary education | [60] (49.6) | [46] (38.0) | [15] (12.4) |
| Tertiary education | [25] (19.4) | [63] (48.8) | [41] (31.8) |
| No formal education | 15 (100.0) | 0 (100.0) | 0 (100.0) |
| Others | [0] (0.0) | [4] (80.0) | [1] (20.0) |
| Total | [175] (50.1) | [117] (33.5) | [57] (16.3) |

BSE = breast self-examination.

**Table 3: Knowledge of breast cancer among women in Umuowa Orlu LGA ($n$ = 349)**

| Question | Option | Yes (%) | No (%) | Do not know (%) |
|---|---|---|---|---|
| What do you understand by the term breast cancer? | | | | |
| | Abnormal growth in the tissue may cause enlargement of the breast, thickening of the breast, and soreness | 170 (48.7) | 17 (4.9) | 162 (46.4) |
| | An illness that is caused by ancestral causes | 104 (29.8) | 32 (9.2) | 213 (61.0) |
| | A disease that runs in one's family | 89 (25.5) | 67 (19.2) | 193 (55.3) |
| | A lump in the breast | 114 (32.7) | 53 (15.2) | 182 (52.1) |
| | A discharge in the breast | 84 (24.1) | 56 (16.0) | 209 (59.9) |
| Which of these do you think are ways of detecting of breast cancer? | | | | |
| | BSE | 192 (55.0) | 6 (1.7) | 151 (43.3) |
| | CBE by a health care provider | 213 (61.0) | 4 (1.1) | 132 (37.8) |
| | Mammogram | 104 (29.8) | 15 (4.3) | 230 (65.9) |
| | Biopsy | 82 (23.5) | 14 (4.0) | 253 (72.5) |
| | Ultrasound | 99 (28.4) | 21 (6.0) | 229 (65.6) |
| | Magnetic resonance imaging | 71 (20.3) | 18 (5.2) | 260 (74.5) |
| Which of these do you think are manifestations/symptoms of breast cancer? | | | | |
| | Breast lump | 203 (58.2) | 4 (1.1) | 142 (40.7) |
| | Soreness | 143 (41.0) | 16 (4.6) | 190 (54.4) |
| | Redness | 133 (38.1) | 17 (4.9) | 199 (57.0) |
| | Discharge | 152 (43.6 | 7 (2.0) | 190 (54.4) |
| | Unusual pain | 154 (44.1) | 17 (4.9) | 178 (51.0) |
| | Nipple aversion/dimpling | 108 (30.9) | 12 (3.4) | 229 (65.6) |
| | Thickening, scaling, and erosion of the nipple and areola | 132 (37.8) | 9 (2.6) | 208 (59.6) |
| | Changes in the shape of the breasts | 152 (43.6) | 3 (0.9) | 194 (55.6) |
| Which of these do you consider as the risk factors for breast cancer? | | | | |
| | Smoking | 145 (41.5) | 31 (8.9) | 172 (49.6) |
| | Family history of breast cancer | 181 (51.9) | 11 (3.20 | 157 (45.0) |
| | Advanced age | 113 (32.4) | 36 (10.3) | 200 (57.3) |
| | Exposure to radiation (x-ray) | 120 (34.4) | 16 (4.6) | 213 (61.0) |
| | High intake of alcohol | 125 (35.8) | 24 (6.9) | 200 (57.3) |
| | Women who have never given birth | 113 (32.4) | 31 (8.9) | 205 (58.7) |
| | Women who do not breastfeed | 125 (35.8) | 28 (8.0) | 196 (56.2) |
| | Obesity | 90 (25.8) | 44 (12.6) | 215 (61.6) |
| | Starting menstruating before 11 years of age | 72 (20.6) | 38 (10.9) | 239 (68.5) |
| | Having your first child from 30 years | 75 (21.5) | 39 (11.2) | 235 (67.3) |
| | Personal history of another cancer | 95 (27.2) | 22 (6.3) | 232 (66.5) |
| | Beginning menopause from 55 years | 90 (25.8) | 37 (10.6) | 222 (63.6) |

BSE = breast self-examination, CBE = clinical breast examination.

changes in the shape of the breast as manifestations of breast cancer.

Responses on the risk factors for breast cancer showed this frequency of response: smoking 145 (41.5%), family history of breast cancer 181 (51.9%), advanced age 113 (32.4%), exposure to radiation 120 (34.4%) high intake of alcohol 90 (25.8%), women who have never given birth 113 (32.4%), women who do not breast feed 125 (35.8%), obesity 90 (25.8%), onset of menstruation before 11 years of age 72 (20.6%), having the first child from 30 years 75 (21.5%), personal history of another cancer 95 (27.2%), and beginning menopause from 55 years 90 (25.8%).

## Discussion

Majority of the participants were farmers, traders, and businesswomen as in the study in Ibadan for which rural

populace is known.[7] The assessment on the participants' awareness showed that participants with higher education have greater awareness of the disease than those with little or no education. There was positive relationship between education and awareness of breast cancer. Knowledge on the various methods of early detection of breast cancer showed that more people knew of BSE and CBE than mammography, ultrasound, breast biopsy and magnetic resonance imaging. This is not consistent with the good knowledge of BSE, CBE mammography, and other methods of early detection of breast cancer noted among female nurses in Bayelsa, Nigeria.[12] This buttresses the importance of knowledge on health-seeking behavior. Despite the fact that majority of the respondents in this study were aware of the meaning of breast cancer the knowledge and understanding of the risk factors for breast cancer were very low. Majority of them did not know that having children at older age and obesity were risk factors for breast cancer. The result correlated with a similar study done in Buea, Cameroon, which recorded that although, a vast majority of the respondents knew of breast cancer; many had misconception about the risk factors of breast cancer.[13] Many participants in this study did not indicate pain in the breast as a symptom in line with a study in Eastern Nigeria.[14]

This further strengthens the need for breast cancer educational programs in rural areas. In the study conducted in a tertiary institution in Ilorin, a State in Western part of Nigeria, most of the respondents knew of the manifestation of breast cancer.[12] The difference in the knowledge of the manifestations of breast cancer between these two studies could be explained by the educational level of the respondents in Ilorin who were mainly university students. Majority of the women in all the villages had consistently indicated that their major source of information was health care providers though some relied on friends and relations. This may have contributed to the myths surrounding breast cancer. However, the findings of this study is in contrast with the results of the studies in Zaria and Lagos, both in Nigeria, where the media was found to be the most common source of information. The difference in the results of previous studies and this study could be attributed to the fact that while those studies were carried out in university settings, this study was carried out in a rural setting where the channel of communication may differ. The difference in awareness and knowledge of breast cancer among rural women who are less educated than women living in the urban was also buttressed in the study conducted by Oluwatosin among some rural women living in South West of Nigeria.[7] There is need for emphasis of health programs at the grass root level in line with the principles of primary health care.

## Conclusion

The findings of this study have provided evidence that there is low level of knowledge and awareness of breast cancer among rural women in Umuowa especially among the less educated. Myth about breast cancer in this community still exist because the major source of information on breast cancer was health care providers shows that nurses and community health workers in the community should scale up health education programs using mass media to provide accurate information on breast cancer because level of awareness was positively related to BSE awareness. Use of mass media can better counteract ``the old woman's tale'' than the ``talks'' at health centers as a larger population can be reached.

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### Conflicts of interest

There are no conflicts of interest.

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