

Full Length Research Paper

Perceived health believes of breast cancer and knowledge of its early detection measures among rural women in Umuduru Mbano, Imo State

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Breast cancer is one of the commonest causes of cancer morbidity and mortality in women in the world, but early detection measure (EDM) has been found to be the solution. This article presents perceived health belief of breast cancer and knowledge of its early detection measures among rural women in Umuduru Mbano, Imo State, Eastern Nigeria. A cross-sectional design was used in the study. A total of 440 young and old women from Umuduru Health District in the study area were sampled. Multistage sampling technique was used in selecting the respondents. Each woman was subjected to a structured questionnaire to elicit information on the perceived health belief of breast cancer and knowledge of its early detection measures. The study revealed that perceived susceptibility to breast cancer was significant among the old and young women. Their perception of the benefits of practice of EDM was significant. Meanwhile, the perceived barrier to practice of EDM among the young and old women was not significant. Findings of this study indicate that there is a need for an interventional study to enhance knowledge and free discussion of early detection measures of breast cancer among rural women in Umuduru Mbano.

Key words: Perceived health belief, early detection measures, breast cancer, young and old women, Umuduru Mbano.

INTRODUCTION

Breast cancer is the most common malignancy in women worldwide. In Nigeria the prevalence of breast cancer is 116 cases per 100,000 women every year (Adebamowo and Ajayi, 2000). According to the World Health Organization (2011), more than 1.2 million women worldwide are diagnosed with breast cancer annually and about 460,000 will die from the disease. The importance

of this type of cancer in Nigeria clearly demonstrated by data collated in regional cancer registries show that breast cancer accounts for 17 to 44.5% of all cancers in women. This proportion is increasing in Nigeria, partly as a result of the changing demographic profile of acquisition of Western lifestyle and the changing socioeconomic profile of the country (Adebamowo and Adegunle, 1999).

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In all the centres (except in Calabar and Eruwa), breast cancer was the most common cancer in women (Banjo, 2004). It has been estimated that between 7000 and 10,000 new cases of breast cancer were developed in Nigeria in 2005, post-menopausal women accounted for 20% of these cases. Adebamowo (2005) identified a peak age of incidence of 43%, with 12% younger than 30 years of age. It has been observed that women from sub-Saharan Africa were found to have a low incidence of breast cancer. This was partly explained by a largely protective reproductive history, including late menarche, early menopause and high parity with prolonged breast-feeding, irregular menses and fewer ovulatory cycles. The average age at diagnosis, however, was approximately 10 years younger than breast cancer patients of Western nations and disease stage distribution was shifted toward more advanced disease, which resulted in higher mortality rates (Arbor, 2005). Sambanje and Mafuvadze (2012) found out that the high breast cancer mortality rate in Sub-Saharan Africa has been attributed to a lack of public awareness of the disease which often leads to late diagnosis of the disease.

According to Janz et al. (2002), the health belief model (HBM) developed by Hochbaum et al. (1950) has been widely used to examine beliefs related to breast cancer screening behaviors, such as practice of breast self-examination (BSE), clinical breast examination (CBE) and mammography. Based on the HBM, individuals are more likely to engage in preventive health behaviors if they perceive themselves to be susceptible to a certain disease/illness (perceived susceptibility), perceive the condition to have potentially serious consequences (perceived severity), believe that a course of action will produce positive outcomes (perceived benefits), or perceive that obstacles or barriers to taking actions are outweighed by the benefits.

With varying incidences of breast cancer across the age groups, it is important for both young and old women to be aware of breast cancer. Cancer mortality can be reduced if cases are detected and treated early (WHO, 2011). It is therefore important that women are informed of early detection measures for breast cancer. It is opined

that formal education will provide an advantage in understanding various health issues and that people with less education have significantly less knowledge of breast cancer; among less socio-economically developed regions in Nigeria, there appears to be a lack of awareness and knowledge among women, which means that the issues are not widely discussed (Pillay, 2002). For example, the breast cancer incidence report of Joint hospital, Mbano in Eastern Nigeria (2006) suggests that early detection measures in Isi-ala Mbano Local Government Area are lacking. A report on regional variations in breast cancer incidence showed that the teaching hospital in Eastern Nigeria had the highest number of

cases of breast cancer in Nigeria (Adebamowo and Adekunle, 1999; Banjo, 2004).

Breast self-examination and clinical breast examination are the readily available self-care options for early detection of breast cancer in Nigeria; however screening mammography is becoming more available and affordable and it has been recommended (American Cancer Society, 2003). In light of these apparent limitations in awareness of breast cancer and early detection measures in Nigeria, along with the varying incidences across the age groups, the aim of this study was to ascertain if there were differences between young (20 to 49 years) and old (50 years and above) women with regard to overall knowledge of breast cancer, knowledge of early detection measures, perceived benefit of early detection, perceived susceptibility, severity of breast cancer and barriers to early detection. The findings would be invaluable in helping health professionals to understand women and their attitudes to early detection measures of breast cancer. Therefore professionals will be able to appropriately and effectively encourage and raise awareness across the age groups of the importance of early detection of breast cancer in Nigeria.

METHODOLOGY

The study utilized a cross-sectional descriptive research design. A total of 440 respondents, made up of young women aged 20 to 49 years and older women aged 50 years and above, who had lived for a minimum period of 6 months in the community were selected using systematic random sampling method. Each woman who met the eligibility criteria for the study and who was willing to participate was subjected to a structured questionnaire to elicit information on the perceived health belief of breast cancer and knowledge of its early detection measures. Adequate information about the study was given to the women, as well as the duration of time required to fill in the questionnaire and the fact that they had the right to opt out at any point during the data collection.

Sampling procedure

A multistage sampling technique was used for this study. At the first stage, the five health districts in Isi-ala Mbano Local Government were listed and Umuduru health district was selected by balloting procedure. Out of the three villages in Umuduru health district, Umuluwe was purposefully selected as it had the highest number of young and old women in Umuduru health district. A sample size was calculated using a formula proposed for studies where the population is less than 10,000 (Araoye, 2004). The formula is: $n / (1 + n / N)$; where n = population of women in Umuluwe (where the study took place), N = population of women in Umuduru (the surrounding area), that is $(608/1+608/1600) = 440$. However, 450 questionnaires were used for the study because of attrition rate. The next step was house selection; a sample interval of three was calculated by dividing the number of houses in Umuluwe, (N) with the number of women (n). $K = N/n$. House selection was done by locating the central house in the village using the primary health care numbering system on houses. Starting from the center, every

third house on either side of the central house was selected. Permission was taken from the leader of the household to get information from a young or old woman within the household, with the help of some of the female community leaders. This process continued until 440 women were interviewed.

Study setting

The study took place in Umuluwe in Umuduru Health District in Isiala Mbandi Local Government Area in Imo State, Eastern Nigeria. Umuduru Health District is made up of three villages, Umuluwe, Umueke and Orji. The population is predominantly Ibos. In Umuluwe the major occupation of the people is farming. The cash and food crops produced include cassava, maize, palm oil and palm kernels. Health facilities available include one comprehensive health centre, many private clinics, one Catholic mission hospital with a School of Nursing and two health posts that take care of the health needs of the people.

Ethical considerations

Permission to conduct the study among women in the community was obtained from the traditional ruler of the village, Umuluwe. Individual consents were granted by each respondent before the questionnaires were given to them. They were informed that they could withdraw from the study at any stage. They were also reassured that such withdrawal or non-participation would not cause prejudice of any sort.

Instrument for data collection

Data were collected through a structured questionnaire developed by the researcher following a preparatory literature review. The questionnaire is made up of three sections: section A, the demographic variables of the subject, section B, knowledge of breast cancer and early detection measures of breast cancer, section C respondents' perceived susceptibility, perceived severity, perceived benefit and perceived barriers to the practice of early detection of breast cancer. Each option in section C was assigned a score; scores ranged from 0 to 5, strongly agreed = 5, agreed = 4, disagree = 3, strongly disagreed = 2, while no response was = 0, after which it was converted to percentage. Scores between 0 to 49 was negative while 50 to 100 was positive. The questionnaire was in English and Ibo language. The test-retest reliability of the instrument was $r = 0.6874$. Utilizing a systematic random sampling of the houses, the selected respondents were given the questionnaire after informed consent. A period of two weeks was used for data collection.

RESULTS

Four hundred and fifty (450) questionnaires were administered to old and young women of Umuluwe in Umuduru. Due to a refusal rate of 2%, 447 (99.3%) questionnaires were retrieved and only 440 (97.8%) were found adequate for analysis. The total number of young women was 220 and also 220 old women. Details of socio-demographic characteristics are stated in Table 1. Table 2 shows that the old women have knowledge of

early detection measures of breast cancer than the young women. 76.4% of the young women and 86.4% of the old women know that clinical breast examination is an early detection measure of breast cancer. Table 3 shows that 58.2% of the young women and 60.0% of the old women knew that exposure to rays will increase their perceived susceptibility to breast cancer. The old women have a higher knowledge of their perceived susceptibility to breast cancer than the young women. Table 4 shows that the young and old women had knowledge of the severity of breast cancer, with 90.0% of the young women and 72.7% of the old women indicating that breast cancer is severe as it can lead to death. Thus the young women have a higher perceived severity. Table 5 outlines that the young and old women perceived that there is a lot to benefit by practicing early detection measures of breast cancer, with 80.9% of the young and 91.8% of the old women confirming that early identification can prolong life.

Table 6 shows that majority of the young respondents, 74.5 and 69% of the old respondents indicated that attitude of health workers was a barrier to early detection measures of breast cancer.

Table 7 showed the respondents perceived susceptibility to breast cancer was significant, with $P = 0.0071$. Their perceived severity of breast cancer was not significant, with $P = 0.6252$. Perceived benefit of early detection measures for breast cancer was significant among the women, with $P = 0.0232$. The old and young women perceived barriers to use of early detection measures was not significant, with $P = 1.1971$.

DISCUSSION

Demographic characteristics and knowledge of early detection measure of breast cancer

Forty seven percent (47.3%) of the old women and 37.3% of young women were married; also 40.9% of the old women and 59.1% of the young women are civil servants. The high level of knowledge of early detection measures of breast cancer reported in this study (young women, 76.4%; old women, 86.4%) may be related to the fact that majority of the respondents were civil servants and more than half of the respondents had tertiary education, therefore they may be able to source information independently of health care workers. This is consistent with findings of other studies where participants were highly educated - in an urban community in Eastern Nigeria, it was found that 54.4% of their respondents had a fair degree of awareness (Okoronkwo et al., 2003; Jebbin and Adotey, 2004). In addition it is an opinion that formal education will provide an advantage in understanding various health issues and that people with

Table 1. Demographic data of participants. For each group (n=220).

Characteristic	Frequency (%) of old respondents n=220	Frequency (%) of young respondents n=220
Age (years)	20-30	92 (41.8)
	31-40	78 (35.5)
	41-49	50 (22.7)
	50-60	134 (61.0)
	61-70	66 (30.0)
	71 above	20 (9.1)
Marital status		
Single	8 (3.6)	56 (25.5)
Married	104 (47.3)	82 (37.3)
Separated	8 (3.6)	4 (1.8)
Divorced	4 (1.8)	8 (3.6)
Windowed	46 (21.0)	26 (11.8)
Educational qualification		
Primary	42 (19.1)	4 (1.8)
JSS/SSCE	16 (7.3)	50 (22.7)
Diploma	60 (27.3)	50 (22.7)
BSc	38 (17.3)	66 (30.0)
MSc	2 (0.9)	8 (3.6)
Commercial	52 (23.6)	26 (11.8)
Occupation		
Farming	18 (8.2)	14 (6.4)
Trading	32 (14.5)	26 (11.8)
Housewife	46 (21.0)	18 (8.2)
Civil servant	90 (40.9)	130 (59.1)
State of origin		
Imo	192 (87.3)	220 (100.0)
Anambra	6 (2.7)	-
Delta	2 (0.9)	-

JSS = junior secondary school; SSCE = senior school certificate examination.

less education have significantly less knowledge of breast cancer (Janz et al., 2002). According to Adebamowo and Ajayi (2000), Oluwatosin (2008) and Oluwatosin and Oladepo (2006), health education and screening programmes for breast cancer were identified in their studies as the cause of low levels of knowledge. It has been suggested that incorporation of teaching about breast awareness into the primary health care programme may be a cheap and cost-effective strategy.

Perceived susceptibility

The perceived susceptibility of the young and old women

to breast cancer was moderate and there was a significant association between the two groups except for being thin and exposure to rays. Within the groups, 58.2% of the young women and 60.0% of the old women believed that exposure to rays would make them susceptible to breast cancer with $X^2 = 0.085$, $P = 0.7711$. Also, 52.7% of the young women and 70.9% of the old women believed that their use of oral contraceptive will make them susceptible to breast cancer, $X^2 = 14.645$, $P = 0.0001$. 54.5% of the young women and 44.6% of the old women disagreed that having their first baby at the age of 40 years will make them susceptible to breast cancer. Additionally, 40.9% of the young women and 61.8% of the old women were able to identify that family history of

Table 2. Respondents' knowledge of early detection measure of breast cancer (n=220).

Variable		Yes		No		Don't know/No response		X ²	P-value
		Freq	%	Freq	%	Freq	%		
Breast self-examination	Young	192	87.3	2	0.9	26	11.8	12.022	0.0025
	Old	206	93.6	6	2.7	8	3.6		
Clinical Breast Examination	Young	168	76.4	12	5.5	40	18.2	7.352	0.0253
	Old	190	86.4	6	2.7	24	10.9		
X-ray	Young	70	31.8	68	30.9	82	37.3	38.484	0.0001
	Old	98	44.5	96	43.6	26	11.8		
Mammography	Young	78	35.5	28	12.7	114	51.8	64.855	0.0001
	Old	146	66.4	36	16.4	34	15.5		
Ultrasound	Young	78	35.5	52	23.6	90	40.9	18.257	0.0001
	Old	78	35.5	88	40.0	54	24.5		
Laboratory test	Young	82	37.3	50	22.7	88	40.0	27.743	0.0001
	Old	74	33.6	98	44.5	48	21.8		

Significant P<0.05. Freq: Frequency.

especially among young women (McPherson et al., 2000). The women do not consider that they are susceptible to breast cancer; they may not practice early detection measures or value the breast cancer screening programmes. Breast cancer screening programmes have been seen as an important component of breast cancer prevention and perceived susceptibility has been linked to an increase in cancer screening (Champion, 1999).

Perceived severity

Many of the respondents perceived that breast

cancer is severe; however there was no significant association in the perception of the two groups in late detection of breast cancer with $X^2 = 1.171$, $P = 0.2793$, less dangerous than other cancers with $X^2 = 0.506$, $P = 0.477$ and breast cancer affecting maternal mortality with $X^2 = 1.383$, $P = 0.2395$. The young and old women knew the prognosis of breast cancer, 76.4% of the young and 88.2% of the old respondents acknowledged that breast cancer could spread to the other parts of the body. Majority of the young women (78.2%) and 82.7% of the old women are of the opinion that the severity of breast cancer is because it is

always detected late. Some of the respondents recognized its severity with 90.0% of the young and 72.7% of the old, indicating that breast cancer can lead to death, $X^2 = 20.519$, $P = 0.0001$. Some of the women may have been aware of this due to previous experience with breast cancer or other forms of cancer.

Perceived benefit of early detection measures

The respondents' perception of benefit of early detection measures for breast cancer was high an

Table 3. The old and young women' perceived susceptibility to breast cancer (n = 220).

Variable	Age group	Perceive susceptibility to breast cancer				Statistics	
		Positive		Negative		X ²	P-value
		Freq	%	Freq	%		
Exposure to rays	Young	128	58.2	92	41.8	0.085	0.7711
	Old	132	60.0	88	40.0		
Use of oral contraceptives	Young	116	52.7	104	47.3	14.645	0.0001
	Old	156	70.9	64	29.1		
Previous benign cancer	Young	100	45.5	120	54.5	17.012	0.0001
	Old	144	65.5	76	34.5		
First child at the age of 40 years	Young	46	20.9	174	79.1	14.947	0.0001
	Old	84	38.2	136	61.8		
First child at the age of 20 years	Young	44	20.0	176	80.0	8.534	0.0035
	Old	72	32.7	148	67.3		
Family history of breast cancer	Young	90	40.9	130	59.1	18.423	0.0001
	Old	136	61.8	84	38.2		
Being fat	Young	52	23.6	168	76.4	12.833	0.0003
	Old	88	40.0	132	60.0		
Being thin	Young	74	33.6	146	66.4	0.513	0.4737
	Old	66	30.0	154	70.0		

Freq: Frequency.

Table 4. The old and young women' perceived severity of breast cancer (n = 220).

Variable	Age group	Perceive severity of breast cancer				Statistics	
		Positive		Negative		X ²	P-value
		Freq	%	Freq	%		
Is always detected late	Young	172	78.2	48	21.8	1.171	0.2793
	Old	182	82.7	38	17.3		
Spread to other organs	Young	168	76.4	52	23.6	9.739	0.0018
	Old	194	88.2	26	11.8		
Is more dangerous than other cancers	Young	130	59.1	90	40.9	13.827	0.0002
	Old	90	40.9	130	59.1		
Leads to deaths	Young	198	90.0	22	10.0	20.519	0.0001
	Old	160	72.7	60	27.3		
Less dangerous than other cancers	Young	76	34.5	144	65.5	0.506	0.477
	Old	68	30.9	152	69.1		
Affects maternal mortality	Young	78	35.5	142	64.5	1.383	0.2395
	Old	91	41.4	129	58.6		

Freq: Frequency.

Table 5. The old and young women' perceived benefit of early detection measures for breast cancer (n = 220).

Variable	Age group	Perceived benefit of early detection measures for breast cancer				Statistics	
		Positive		Negative		X ²	P-value
		Freq	%	Freq	%		
Early identification of breast cancer	Young	194	88.2	26	11.8	0.21	0.6464
	Old	198	90.0	22	10.0		
Reduces maternal mortality	Young	176	80.0	44	20.0	4.91	0.0267
	Old	194	88.2	26	11.8		
Treatment at a lower cost	Young	180	81.8	40	18.2	3.012	0.0826
	Old	198	90.0	22	10.0		
Prolong life	Young	178	80.9	42	19.1	10.209	0.0014
	Old	202	91.8	18	8.2		
Ability to detect lump	Young	162	73.6	58	26.4	7.27	0.007
	Old	186	84.5	34	15.5		

Freq: Frequency.

was high and there was a significant association in their perception which accepts the respondent's early identification of breast cancer and treatment at a lower cost. Majority of the women in both groups had formal education and were able to perceive that early detection measures of breast cancer can be of benefit to them $X^2 = 0.21$, $P = 0.6464$. Within the groups, 80.0% of the young women and 88.2% of the old women believed reduction of maternal mortality to be a benefit and 81.8% of the young women and 90.0% of the old women said it leads to reduction in the cost of treatment. Meanwhile, 73.6% of the young women and 84.5% of the old women knew that ability to detect lump was a benefit, with $X^2 = 7.27$, $P = 0.007$. Similarly, studies carried out by the following

authors Jatoi (1997), Nzarusara (1999) and Oluwatosin (2008) found out that their respondents considered early detection measures of breast cancer to be of benefit to them.

Perceived barriers to use of early detection measures

Majority of the respondents, 79.1% of the young women and 62.7% of the old women considered lack of knowledge as a major barrier to early detection practice. The poor attitude of health workers was not significant, with $X^2 = 1.359$, $P = 0.2438$. Cultural belief was also seen as barrier - in many societies women cannot make decision of

their own unless given permission by their husbands, or sometimes their mother-in-laws. Many people also believe that people get diseases like cancer after offending the gods of the land. Health workers, as the major source of knowledge for these women, have a significant role to play. The educational preparation for health workers should include both theoretical knowledge and opportunities to develop skills in early detection procedures. These skills include breast self-examination and clinical breast examination. There is also the need to have good knowledge of the principles of teaching and learning as well as the art of communication, this can be transferred into skills. Nurses are expected to serve as role models for early detection of breast cancer (Lillington

Table 6. The young and old women' Perceived barriers to use of early detection measures of breast cancer (n = 220).

Variables	Age group	Perceived barriers to use of early detection measures between women				Statistics	
		Positive		Negative		X ²	P-value
		Freq	%	Freq	%		
Cultural belief	Young	57	25.9	163	74.1	11.731	0.0006
	Old	92	41.8	128	58.2		
High cost of investigation	Young	90	40.9	130	59.1	13.827	0.0002
	Old	130	59.1	90	40.9		
Lack of support from family	Young	32	14.5	188	85.5	26.458	0.0001
	Old	80	36.4	140	63.6		
Receiving medical treatment from herbalist	Young	134	60.9	86	39.1	1.188	0.2757
	Old	146	66.4	74	33.6		
Lack of knowledge of early detection measures	Young	174	79.1	46	20.9	13.497	0.0002
	Old	138	62.7	82	37.3		
Attitude of health workers	Young	164	74.5	56	25.5	1.359	0.2438
	Old	152	69.1	68	30.9		

Freq: Frequency.

Table 7. The old and young women perceptions to breast cancer (n = 220).

Variable	Young				Old				P-value
	Positive		Negative		Positive		Negative		
	Freq	%	Freq	%	Freq	%	Freq	%	
Perceived susceptibility to breast cancer	81	36.8	139	63.2	110	50.0	110	50.0	0.0071
Perceived severity of breast cancer	137	62.3	83	37.7	131	59.5	89	40.5	0.6252
Perceived benefit of early detection measures for breast cancer	178	80.9	42	19.1	196	89.1	24	10.9	0.0232
Perceived barriers to use of early detection measures between women	109	49.5	112	50.9	123	55.9	97	44.1	0.1971

Freq: Frequency.

et al., 1993). Nurses knowledge should be transferred to practice if not the nurse has failed in her role. However early detection of breast cancer is the primary determinant in survival. It is therefore recommended that women should receive age-appropriate periodic screening and education, which includes a combination of mammography, clinical breast examination and breast self-examination. More than 90% of breast cancers were discovered by women themselves. The need to develop the chances of women detecting breast cancer and promptly reporting any changes was emphasized by Jones and Trabeaux (1996). Adegoke (1992) found out that most of the older respondents also indicated that non-utilization of health facilities, finance and receiving medical treatment from herbalist were barriers to the practice of early detection measures. Barriers to breast cancer screening identified included: economic barriers, difficulty with transportation, inconvenience, lack of time, psychological factors such as fear and fatalism, lack of knowledge and awareness of breast cancer and misunderstanding of recommended screening frequency. In addition, it has been suggested that there is a need to dispel myths, change beliefs and modify the perception of the intended audience in order to have health promotion activities (Erwin et al., 1996).

Conclusion

This article provides a perceived health belief of breast cancer and knowledge of its early detection measures among rural women in Umuduru Mbano. Women should be educated on how to identify early signs of breast cancer to ensure that a quick treatment can be effected. The respondents all had a high knowledge of breast cancer and early detection measures. The younger respondents did not see breast cancer as a disease of older women but as a disease that all women should look out for in the bid to reduce maternal mortality and mobility caused by breast cancer. Cultural belief still plays an important negative role on the health of women in Nigeria till date. Even with their high level of education and exposure most women cannot fight some of the cultural norm that affect their health which explains why 26.0% of the young women and 41.8% of the old women believed culture would prevent women from practicing early detection for breast cancer. There is a need to involve not only health professionals in creating awareness of early detection measures of breast cancer, religious organizations should be included. This campaign should extend throughout the public with the aid of electronic media where possible.

Key points

1. The three major early detection measures for breast

cancer are breast self-examination, clinical breast examination and mammography

2. The diagnosis of breast cancer is an issue that is not freely discussed due to lack of knowledge among women in Eastern Nigeria.

3. Barriers to use of early detection methods included: economic barriers, lack of knowledge and awareness of breast cancer, attitude of health workers, recommended screening frequency and cultural belief.

4. Perceived health belief of breast cancer and knowledge of its early detection measures among rural women would be improved by campaigns targeting different social groups and using electronic media where possible.

Authors' contributions

AOH carried out the research work under the supervision of OOA who provided methodological input and drafted the manuscript. The authors provided clinical knowledge of breast cancer, worked on the statistical analysis including statistical expertise. All authors have reviewed the final manuscript

Competing interests

The authors declare that they have no competing interest in this study.

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