

Original Research Article

A Community Based Rural-Urban Comparison of Knowledge and Perception of Women towards Breast Cancer in South Western Nigeria

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ABSTRACT

Introduction: Cancer of the breast has continued to pose a threat to women's health worldwide. In Nigeria, late presentation has been a consistent finding among patients with its consequent grave prognosis.

Objective: The study set out to assess the knowledge and attitude of women who live in rural and urban communities of towards breast cancer

Materials and Methods: The study was a cross-sectional comparative survey. A total of 680 women, 340 in two predominantly rural and 340 in two predominantly urban LGAs in Osun state were interviewed using a semi-structured, interviewer-administered questionnaire. Quantitative data were analysed using SPSS software version 16.0.

Results: Results showed that 60.9% of the women in rural areas compared to 13.2% in urban areas had poor knowledge of breast cancer; ($\chi^2=147.9$, $p = 0.0001$). In general, 63.8% and 52.7% of rural and urban women respectively exhibited a negative attitude towards breast self-examination as a preventive practice. ($\chi^2=42.5$, $P=0.0001$). Among respondents who have heard of breast cancer, 56.8% and 84.1% in rural and urban areas respectively agree that breast cancer is preventable. About 72% and 86% of respondents in rural and urban areas also agree that breast cancer is curable if detected early.

Conclusion: The study concluded that women in underserved rural communities had poorer knowledge of breast cancer and exhibited a negative attitude towards breast cancer and its preventive practices compared to those in urban areas.

Keywords: Breast Cancer, Knowledge, Rural and Urban Communities.

INTRODUCTION

The breast to an African woman is a source of pride. It is seen as an organ for nurturing the young, a component of her body image and a symbol of self-confidence. Though not primarily sex organs, it also has an unusual erotic significance to the man. ^[1] Cancer of the breast is that scourge which has continued to pose a threat to women's health. It has now been rated as the commonest cancer in

women and has emerged as a leading challenge to the public health. ^[2] Estimates from the GLOBOCAN study group report on the worldwide burden of cancer, showed that about 12.7 million cancer cases and 7.6 million cancer deaths occurred in 2008. ^[3,4] Of these, 56% of the cases and 64% of the deaths occurred in the economically developing world. ^[2,3] Breast cancer is the most frequently diagnosed cancer and the leading cause of cancer death among

females, accounting for 23% of the total cancer cases and 14% of the cancer deaths worldwide. [4,5] Currently, incidence of breast cancer is projected to reach about 15 million by 2025, with 60% of those cases occurring in developing countries. [6]

In Nigeria for example, late presentation has been a consistent finding among patients with a majority of them being women in rural communities who have identified ethnic, socio-demographic, economic, and geographic disparities compared with urban populations. [7,8] In addition, reports have shown that most rural populations which are made up of older, poorer, and less educated encounter barriers to health care services and support thereby making them vulnerable to a higher incidence of breast cancer. [9,10] Recent studies on rural-urban difference in breast cancer occurrence have shown higher incidence in urban areas and more developed populations. [11,12] Likewise, studies have also identified significant disparities in stages of diagnosis between people living in rural and urban areas, with a greater incidence of late stage diagnosis generally found in rural areas. [8,13,14] The study set out to assess the knowledge and attitude of women who live in rural and urban communities of towards breast cancer.

MATERIALS AND METHODS

The study was conducted in four Local Government Areas (LGAs) areas namely: Ife-North, Atakumosa west (Rural LGAs), Ife East and Ife-Central LGAs (Urban LGAs) of Osun State South Western part of Nigeria. The study was a cross-sectional study involving 680 women aged 20 years and above in selected rural and urban Local Government Areas.

The respondents were selected using multistage sampling technique. The first stage involved selection of one out of the three senatorial districts using simple random sampling method. The second stage involved the selection of two predominantly rural and two urban Local Government

Areas (LGAs) by simple random sampling method from a sample frame of all rural and urban LGA in the selected senatorial district. The third stage involved the listing of wards in each chosen LGA and the selection of five wards by simple random sampling method. The listing of all the settlements in the wards was done in the fourth stage, and two settlements were selected from each ward by simple random sampling technique. The fifth stage involved the listing of streets or compounds in each selected settlement thereafter; three streets were selected using simple random sampling technique. At the street level, respondents were selected using the systematic sampling method. In households where no one met the eligibility criteria, the house number was noted and the next to it visited. In areas without well demarcated streets, a landmark feature of the community (the main market, town hall or palace of the king in some cases) was identified and a bottle spurned round with the tip of the bottle pointing to the starting point.

Additional data was sought by conducting focus group discussions sessions (FGDs), with women who reside in rural and urban areas. A total of four FGD sessions were conducted and each group comprised about 8 participants.

The qualitative data collected from the Focus group discussion sessions were recorded on tape, translated and transcribed on to text and validated. The outputs were coded and detailed content analysis was performed. Some results of the FGD were presented in pros in the discussion. Quantitative data were analysed using SPSS software version 16.0

RESULTS

The age of respondents ranged from 20-60 years with mean (Standard deviation) for women in rural and urban areas as 33.81(\pm 10.50) and 32.06 (\pm 7.59) years respectively. The difference in mean age between women recruited from rural and urban areas was statistically significant. ($t=$

2.49, P=0.013). A higher proportion (95.6%) of respondents in urban areas had at least secondary education compared to 28.5% in rural areas (p<0.0001). The distribution in educational attainment between rural and urban areas was statistically significant. A higher proportion (83.2%) of respondents were married in rural areas compared to 74.4% in urban areas (p= 0.0001). As regards respondent's religion, they were predominantly

Christians in both rural (73.1%) and urban (88.2%) areas. Almost all respondents were of Yoruba ethnicity. Responses to some knowledge questions showed that women residing in urban areas demonstrated better knowledge of risk factors, early warning signs and benefit of early presentation compared to those in rural areas. The differences were statistically significant for all questions asked. (Table 1)

Table 1: Participants' awareness and knowledge of breast cancer by place of residence

	Place of residence		Total n= 680 (%)	Statistical tests
	Rural n=340 (100%)	Urban n=340 (100%)		
Ever heard of breast cancer				
No	69 (20.3)	19 (5.6)	88 (12.9)	$\chi^2= 32.63$, df= 1 p= 0.0001**
Yes	271 (79.7)	321 (94.4)	592 (87.1)	
	n=271 (100%)	n=321 (100%)	n=592 (100%)	
Breast cancer is common in women				
No	99 (36.5)	35 (10.9)	134 (22.6)	$\chi^2=55.11$, df= 1 p= 0.0001**
Yes	172 (63.5)	286 (89.1)	458 (77.4)	
Breast cancer is inherited?				
No	205 (75.6)	133 (41.4)	338 (57.1)	$\chi^2=70.21$, df= 1 p= 0.0001**
Yes	66 (24.4)	188 (58.6)	254 (42.9)	
Breast cancer is caused by evil spirit				
No	128 (47.2)	240 (74.8)	368 (62.2)	$\chi^2=47.36$, df= 1 p= 0.0001**
Yes	143 (52.8)	81 (25.2)	224 (37.8)	
Breast cancer is caused by infections				
No	33 (12.2)	135 (42.1)	168 (28.4)	$\chi^2=64.54$, df= 1 p= 0.0001**
Yes	238 (87.8)	186 (57.9)	424 (71.6)	
Obesity could increase the risk of having breast cancer				
No	213 (78.6)	148 (46.1)	361 (61.0)	$\chi^2=65.20$, df= 1 p= 0.0001**
Yes	58 (21.4)	173 (53.9)	231 (39.0)	
In early phase breast cancer presents as a painless breast lump				
No	204 (75.1)	101 (31.5)	305 (51.4)	$\chi^2=111.51$, df= 1 p= 0.0001**
Yes	67 (24.9)	220 (68.5)	287 (48.6)	
Breast cancer in advanced stage present with pain, and ulceration of the nipple				
No	164 (60.5)	82 (25.5)	246 (41.6)	$\chi^2=73.99$, df= 1 p= 0.0001**
Yes	107 (39.5)	239 (74.5)	346 (58.4)	

χ^2 = Pearson Chi-square, *Statistically significant at p value < 0.05 ** Statistically significant at p value < 0.001

Table 2: Respondents' attitude toward prevention and early diagnosis of breast cancer by place of residence

Characteristics	Place of residence (%)		Total n=592(100)	Statistical tests
	Rural n=271 (60.9)	Urban n=321 (39.1)		
Breast cancer is preventable				
Agree	154 (56.8)	270 (84.1)	424 (71.6)	$\chi^2 = 55.01$ df = 2 p = 0.0001**
Indifferent	11 (4.1)	8 (2.5)	19 (3.2)	
Disagree	106 (39.1)	43 (13.4)	149 (25.2)	
Breast cancer is curable if detected early				
Agree	197 (72.7)	279 (86.9)	476 (80.4)	$\chi^2= 19.03$ df = 2 p = 0.0001**
Indifferent	9 (3.3)	4 (1.3)	13 (2.2)	
Disagree	65 (24.0)	38 (11.8)	103 (17.4)	
Early diagnosis improves treatment outcome				
Agree	215 (79.3)	302 (94.1)	517 (87.3)	$\chi^2= 31.62$ df = 2 p = 0.0001**
Indifferent	7 (2.6)	6 (1.9)	13 (2.2)	
Disagree	49 (18.1)	13 (4.0)	62 (10.5)	
Breast self examination is useful in early diagnosis				
Agree	200 (74.4)	307 (95.6)	507 (85.9)	$\chi^2= 55.11$ df = 2 p = 0.0001**
Indifferent	10 (3.7)	3 (1.0)	13 (2.2)	
Disagree	59 (21.9)	11 (3.4)	70 (11.9)	

χ^2 = Pearson Chi-square, LR χ^2 = Likelihood ratio Chi-square, *statistically significant at p value < 0.05, ** statistically significant at p value < 0.001

Among respondents who have heard of breast cancer, 56.8% and 84.1% in rural and urban areas respectively agree that breast cancer is preventable. About 72% and 86% of respondents in rural and urban areas also agree that breast cancer is curable if detected early. The differences were statistically significant for all questions asked. (Table 2)

Overall knowledge of breast cancer (Table 3) showed that 60.9% of respondents in rural areas had poor knowledge of breast cancer compared with 13.2% in urban areas. In addition, 35.0% and 70.6% of rural and urban respondents respectively exhibited a positive attitude towards breast cancer.

These differences were both statistically significant. Findings from the focused group discussion showed that majority of participants strongly believed in mystical entities such as “evil spirits” as being the cause of breast cancer. Other participants are of the view that keeping money in the breast is also a risk factor for breast cancer. However a few participants were of the opinion that excessive consumption of canned food was a risk factor for breast cancer. A 34 year old house wife in a rural area responded as follows “Keeping hand-phones close to or in the bra can cause breast cancer” while an urban dwelling hair dresser said,

Table 3: Summary of knowledge and attitude towards breast cancer by place of residence

	Place of residence		Total n= 680 (%)	Statistical tests
	Rural n=340 (100%)	Urban n= 340 (100%)		
Knowledge				
Poor	207 (60.9)	45 (13.2)	252 (37.1)	$\chi^2= 165.46$ df= 1 p= 0.0001**
Good	133 (39.1)	295 (86.8)	428 (62.9)	
Attitude				
Negative	221 (65.0)	100 (29.4)	321 (47.2)	$\chi^2= 86.39$ df= 1 p= 0.0001**
Positive	119 (35.0)	240 (70.6)	359 (52.8)	

χ^2 = Pearson Chi-square, *statistically significant at p value < 0.05, ** statistically significant at p value < 0.001

Table 4: Sources of information about breast cancer and breast self-examination (BSE)

	Rural n=340 (%)	Urban n=340 (%)	Total n=680 (%)
Sources of information on breast cancer			
Electronic Media (TV, Radio etc)	160 (47.6)	112 (25.2)	272 (34.8)
School/Training Institution	17 (5.1)	159 (35.7)	176 (22.5)
Health workers (Nurses, Doctors, CHO, etc)	70 (20.8)	101 (22.7)	171 (21.9)
Friends	50 (14.9)	22 (4.9)	72 (9.2)
Women Organization	11 (3.3)	19 (4.3)	30 (38.4)
Churches/Religious groups	15 (4.5)	10 (2.2)	25 (3.2)
Newspaper/magazines	5 (1.5)	17 (3.8)	22 (28.1)
Parents/Siblings and relatives	8 (2.4)	5 (1.1)	13 (1.7)
Sources of information on BSE			
Health workers (Nurses, Doctors, CHO, etc)	113 (47.9)	154 (35.3)	267 (39.7)
Electronic Media (TV, Radio etc)	77 (32.6)	101 (23.2)	178 (26.5)
School/Training Institution	3 (1.3)	61 (14.0)	64 (9.5)
Newspaper/magazines	12 (5.1)	43 (9.9)	55 (8.2)
Women Organization	6(2.5)	45 (10.3)	51 (7.6)
Friends	12 (5.1)	17 (3.9)	29 (4.3)
Parents/Siblings and relatives	10 (4.2)	12 (2.8)	22 (3.3)
Churches/Religious groups	3 (1.3)	3 (0.7)	6 (0.9)

“Wearing dirty bra, when you wear the same bra everyday can cause breast cancer” Regarding respondent’s sources of information on breast cancer and breast self-examination, the electronic media (Television and Radio) were the leading sources of information for women in rural areas. While for respondents in urban areas, formal, electronic media and health workers were the leading sources of information.

Respondent’s source of information on breast self-examination was mainly health workers (Nurses, Doctors, CHO etc) in both rural and urban areas. This was followed by the electronic media. (Table 4)

Of all factors considered in rural areas regarding the influence of socio-demographic characteristics of respondents, on knowledge, age of respondents, level of education and marital status showed a

significant association with knowledge of breast cancer. (Table 5)

association with knowledge in urban areas. (Table 6)

Of all factors considered, only level of education showed statistically significant

Table 5: Knowledge of breast cancer by some socio-demographic characteristics of respondents in rural areas

Characteristics	Knowledge of breast cancer n (%)		Total n=340 (100)	Statistical tests
	Poor Knowledge n=207 (60.9)	Good Knowledge n=133 (39.1)		
Age(years) Less than 40 40 or older	153 (58.0) 54 (71.1)	111 (42.0) 22 (28.9)	264 76	$\chi^2 = 4.25$ df = 1 p = 0.045*
Level of Education None Primary Secondary Tertiary	17 (81.0) 51 (71.8) 125 (57.6) 14 (45.2)	4 (19) 20 (28.2) 92 (42.4) 17 (54.8)	21 71 217 31	LR $\chi^2 = 11.76$ df = 3 p = 0.008*
Marital Status Single Married	24 (45.3) 183 (63.8)	29 (54.7) 104 (36.2)	53 287	$\chi^2 = 6.41$ df = 1 p = 0.014*
Religion Christianity Islam	146 (59.1) 61 (65.6)	101 (40.9) 32 (34.4)	247 93	$\chi^2 = 1.19$ df = 1 p = 0.147
Parity Nil One or more	30 (62.5) 177 (60.6)	18 (37.5) 115 (39.4)	48 292	$\chi^2 = 0.01$ df = 1 p = 0.874

χ^2 = Pearson Chi-square, LR χ^2 = Likelihood ratio Chi-square, *statistically significant at p value < 0.05, ** statistically significant at p value < 0.001

Table 6: Knowledge of breast cancer by some socio-demographic characteristics of respondents in urban areas

Characteristics	Knowledge of breast cancer n (%)		Total n=340 (100)	Statistical tests
	Poor Knowledge n=45 (13.2)	Good Knowledge n=295 (86.8)		
Age(years) Less than 40 40 or older	38 (13.2) 7 (13.5)	250 (86.8) 45 (86.5)	288 52	$\chi^2 = 0.00$ df = 1 p = 0.550
Level of Education None Primary Secondary Tertiary	0 (0.0) 1 (8.3) 25 (21.4) 19 (9.1)	3 (100.0) 11 (91.7) 92 (78.6) 189 (90.9)	3 12 117 208	LR $\chi^2 = 10.34$ df = 3 p = 0.009*
Marital Status Single Married	10 (11.5) 35 (13.8)	77 (88.5) 218 (86.2)	87 253	$\chi^2 = 0.31$ df = 1 p = 0.362
Religion Christianity Islam	0 (13.3) 5 (12.5)	260 (86.7) 35 (87.5)	300 40	Fisher's Exact probability=0.559
Parity Nil One or more	15 (11.5) 30 (14.4)	116 (88.5) 179 (85.6)	131 209	$\chi^2 = 0.59$ df = 1 p = 0.442

χ^2 = Pearson Chi-square, *statistically significant at p value < 0.05, ** statistically significant at p value < 0.001, LR χ^2 = Likelihood ratio Chi-square

DISCUSSION

Rural-urban comparisons have identified health disparities among economic groups, ethnic groups, socioeconomic groups, genders and geographic locations, such as a urban, semi-urban and rural. [15] Previous studies have identified significant disparities in stages of diagnosis between people living in rural and urban areas, with a greater incidence of late

stage diagnosis generally found in rural areas. [12,16,17] Studies have shown that most rural populations are vulnerable to a higher incidence of modern chronic diseases because they are older, poorer, and less educated. [18-20] This difference is reflected in higher crude mortality rates reported from rural areas for all cancers. Knowledge of breast cancer and its preventive practices such as breast self-examination and clinical

breast examination may be low among rural dwellers. [8,19,21] In addition, a greater incidence of late presentation of breast cancer cases principally from rural areas continues to carry the day in our health institutions. This has been linked to lower levels of educational attainment and presence of women who are older and poorer in these underserved communities.

Findings from these study showed that about 60% of women in rural areas had poor knowledge of breast cancer compared to 13% among women in urban areas. Accordingly, this finding of about three out of five women in rural areas having poor knowledge of breast cancer compared to less than one in five among women in urban areas may partly be explained by the lower educational level, limited access to information on breast cancer and its risk factors and perhaps limited breast cancer related interventions in rural and underserved areas. This result was comparable to finding by Amosu et al and Okobia in their studies on knowledge, attitude and practice of Nigerian women towards breast cancer, showing that women living in rural areas in Nigeria have poorer knowledge of breast cancer and its prevention practice. [22,23] Similarly, studies by Oluwatosin, Balogun and Karbani also reported similar findings of about two in five of their respondents having poor knowledge. [8,24,25] Despite existing effort at raising awareness of breast cancer, poor knowledge of breast cancer among women in rural communities remains a common finding in developing countries and underserved communities in particular. [19,24] This may partly explain the late presentation seen in over seven out of ten women with the disease. [17] This finding affirms the need for intervention health education on breast cancer awareness, its risk factor and prevention and screening programs. Therefore increasing women's knowledge to appreciate their true risk of breast cancer should promote access and use of screening or primary prevention strategies.

CONCLUSION

The study concluded that women in rural areas had poorer knowledge of breast cancer and exhibited a negative attitude towards breast cancer and its preventive practices compared to those in urban areas. Health education interventions are advocated by health programmers, to increase the knowledge of breast cancer, its risk factors and early detection measures among women in underserved communities.

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