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EARLY DETECTION AND SCREENING OF BREAST CANCER IN SOUTH-EASTERN STATE OF NIGERIA WITH LINKAGES TO TREATMENT; A COMMUNITY-BASED INTERVENTIONAL STUDY

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ABSTRACT

Background: Early detection and treatment of breast cancer are considered the most promising approaches to reducing breast cancer mortality rates. **Aim:** In response to the calls for a collaborative effort to halt the cancer scourge by WHO experts on the eve of World Cancer Day, 2021; and Nigerian government; this study aimed to increase the uptake of breast cancer screening in communities of Imo State, south-eastern Nigeria, using available resources. **Methods:** A 6-month community-based interventional study was conducted among 780 randomly selected women aged 18years and above, resident in the communities of study. Self-administered questionnaires were used to collect data on sociodemographic characteristics and baseline practice of breast cancer screening. The communities were subsequently split randomly into comparison and intervention groups. Education on breast health awareness and breast cancer screening were given to women in both groups alongside Clinical Breast Examination (CBE). Reminders and additional monthly sensitization activities collaborating with breast cancer survivors, were conducted in the intervention communities. Uptake of screening and knowledge gain were the outcome measures. The socio-demographic characteristics was summarized using descriptive statistics. Continuous variables were summarized using mean, median, mode, range and standard deviation. Percentages and frequencies were calculated for the categorical variables. Chy-square and logistic regression were used to determine differences in breast cancer screening uptake in the intervention and comparison communities post study. Independent T-test was used to compare recall scores for knowledge gain, post-study in the intervention and comparison groups. Data analyses was performed using IBM SPSS Version 20. **Result:** Sociodemographic characteristics of the participants in both interventional and comparison groups were comparable with slight differences in proportion. The proportion of women in the intervention and comparison groups who took up breast cancer screening at follow-up showed significant improvement on the baseline screening practice, likewise between participants in the intervention and comparison groups (P= 0.000). The Recall scores which assessed knowledge gain, showed significant increase among participants in the intervention group (P= 0.000). **Conclusion:** There was significant improvement in all the outcome measures among participants in the intervention group. For early detection, improved breast health and concerted fight against the ravaging breast cancer scourge, screening opportunities need be increasingly available; with more education efforts to improve knowledge and uptake.

KEYWORDS: Breast Cancer, Early Detection, Breast Cancer Screening.

I. BACKGROUND

Breast cancer is the most common cancer and causes the majority of cancer-related deaths among women.[1] This is a common concern in low- and middle-income countries, including sub-Saharan Africa, where mortality and morbidity rates are rising.[2,3] Mortality from breast cancer is higher in underdeveloped countries due to lack of early detection and lack of access to treatment facilities.[4] According to experts from the World Health Organization, on World Cancer Day 2021, breast cancer has become the most common cancer in the world. The World Health Organization calls for joint efforts between IARC, the International Atomic Energy Agency, and other industry partners to reduce breast cancer mortality by improving breast health, early detection, and quality care. Breast cancer usually has no symptoms when the tumour is small and easy to treat, so screening is important to ensure early detection.[5]

Early detection of cancer involves two strategies: screening and early diagnosis. Screening involves the use of routine tests to detect and treat specific cancers in asymptomatic populations before they threaten the well-being of individuals or society. Early diagnosis is based on public and professional understanding of signs and symptoms related to cancer, especially for improving health, appropriate clinical diagnosis and early referral for suspected cancer.[6,7] Early detection and treatment of breast cancer is considered the most promising approach to reduce breast cancer mortality.[4] The American Cancer Society recommends early detection of breast cancer through breast self-examination (BSE), clinical breast examination (CBE), and mammography.[8] More than 90% of breast cancer patients are treated at an advanced stage.[9,10] As a result, almost all breast tumours are diagnosed clinically and at an advanced stage. Not knowing how to detect early disease can lead to a lack of understanding of the effectiveness of early intervention through the tumour early and evidence-based treatment. When resources are limited, CBE screening is the best initial method to start an early detection program.[12] In countries where population screening is widespread, mass screening for breast cancer can be done through mammography screening. However, if there is sufficient evidence from ongoing research, CBE can be implemented with limited resources.[13] In low- and middle-income countries, where mammography screening is rare, lack of early detection and access to treatment are major factors in breast cancer mortality.[14]

Second only to South Africa, sub-Saharan Africa has the highest incidence of breast cancer,[2] with half of women diagnosed with breast cancer dying from the disease.[15] Breast cancer and breast cancer mortality are increasing in SSA and are becoming epidemic in Africa. If left unchecked, breast cancer will increase morbidity in sub-Saharan Africa, increase poverty and gender inequality, and reverse current global gains in maternal and neonatal mortality. Given the cost of diagnosing and treating breast cancer, many women do not have the means or ability to get regular breast cancer screenings. Consequently, this terrible disease continues to harm and harm our women.

In the absence of a well-coordinated national screening program, which has contributed significantly to the late detection of most cancers, the number of cancer cases in the country is increasing. Against this backdrop, the Nigerian government launched the National Cancer Control Plan (NCCP) 2018-2022 with four key components to combat cancer: prevention, early detection, diagnosis, treatment and palliative care.[16] The plan has yet to receive tangible policy action from the Nigerian government, therefore requires the cooperation of all Nigerians, especially people and organizations fighting cancer.

This study was in response to the calls by WHO on the eve of World Cancer Day 2021; and by the Nigerian government, as contained in the National Cancer Control Plan (NCCP) 2018-2022,[16] aimed at applying current scientific knowledge about breast cancer to early diagnosis of breast cancer, a step at the population level, using existing resources to increase the uptake of screening services and determine outcome of organized breast cancer screening for early detection intervention in order to drastically step up the fight against breast cancer. There is paucity of evidence on such studies in Imo State addressing breast cancer early detection and screening. Most research on community campaigns for promoting cancer screening has been conducted in Western countries and there are many differences in culture, community identities, participation, and ownership between communities in western and other developing countries of the world; hence, in-appropriate to directly adopt the results of studies from Western countries. The theoretical framework that guided the community-based interventions were the Health Belief Model (HBM), a health behavior change model used to predict individuals' responses and change in their behavior to prevent diseases.[17,18,19]

Aim of the study
The aim of this study was to determine the outcome of breast cancer early detection and screening intervention in Imo State communities, with linkages to treatment.

Research Questions
1. What is the uptake rate of BSE and CBE in Imo State communities following an organized breast cancer early detection and screening programme?
2. What is the status of knowledge gain on breast health among participants in the intervention and comparison groups at the end of study?

Research Hypothesis
To guide the study, the following hypotheses were postulated:

1. **H₁:** There is significant difference in breast cancer screening uptake among participants in the intervention and comparison communities at an alpha level of 0.05.
H₀: There is no significant difference in breast cancer screening uptake among participants in the intervention and comparison groups at an alpha level of 0.05.

2. **H₁:** There is significant difference in the mean recall scores, which depict the status of knowledge gained by participants in the intervention and comparison groups at an alpha level of 0.05.
H₀: There is no significant difference in the mean recall scores, which depict the status of knowledge gained by participants in the intervention and comparison groups at an alpha level of 0.05.

II. METHODS
A. Study Design
This is a community-based interventional study conducted in Imo State, south-eastern Nigeria. Participants were women aged 18years and above, resident in the communities of study and enrolled from Owerri and Orlu senatorial zones of the state. Socio-demographic data was collected using structured, standardised and self-administered questionnaires in 780 randomly selected women, having excluded women who declined to participate and critically ill women. The questionnaire was reviewed, pre-tested and tested in local government areas not primarily selected for the study. Face and content validity were ensured. Reliability of the instruments were assessed through a test-retest method while ensuring internal consistency. Information on practice of breast cancer screening and knowledge on breast cancer and breast cancer screening were sought. Thereafter, the communities were split randomly into control and intervention groups. Uptake of breast cancer screening and knowledge gain as outcome measures, were sought at the end of study in both the intervention and comparison communities.

B. Area of Study
This study was conducted in 2 out of the 3 geopolitical zones of Imo State.

Imo is one of the 36 States of Nigeria and one of the seven states created by the Federal Military Government.[20] Imo State has a population projection of 5, 408, 800 with an area of 5,135km² and population density of 1,053 people per square kilometer.[21]

C. Interventions
The interventions in the study were
Education program for the women on breast health.
Breast cancer screening- Clinical Breast Examination.
Reminders for follow-up.

Monthly campaigns in collaboration with breast cancer survivors (for intervention communities only)

D. Outcome Measures
1. Knowledge gained- increased breast health awareness in the community assessed using the recall scores at end of the study. This was graded as very poor, poor, moderate, good and very good.
2. Uptake of breast cancer screening - Three outcome measures were assessed, each related to having performed breast self-examination (BSE), clinical breast examination (CBE) by a health care provider, and intension to and/or have mammogram performed within a certain time following the study.

E. Sampling Size and Sampling Methods
Sample Size
The sample size was calculated using the Taro Yamane formular for sample size calculation for a given population,[22] formulated by the statistician Taro Yamane in 1967. The mathematical illustration for the Taro Yamane method: $n = N/(1 + N(e)^2)$; Where: n= Sample size, N= Population under study, e= Margin error. The population under study was calculated from the 2016 projected population for the local government areas (LGA) under study. Ten percent of the calculated was used for the study which gave a total sample size of 780.

Sampling Methods
Purposive sampling method was used to select Imo East senatorial district (Owerri zone) and Imo West senatorial district (Orlu Zone) which are the two closest of the three geopolitical districts that make up Imo State and based on proximity to tertiary hospitals, for ease of linkage of women with or at risk of breast cancer to treatment. Simple random sampling method was used in selecting 4 out of the 12 local government areas that constitute Orlu zone; and 3 out of the 9 local government areas that constitute Owerri zone. The researcher enlisted all the communities in the local government areas selected on a different ballot paper and randomly selected the ballot paper. Two communities per local government area were selected for the study and subsequently divided into two random groups to represent the intervention and comparison groups.

Following community entry and informed consent, stratified random sampling was used to select the target population which were women 18years and above. After recruitment of study population, medications for common ailments for the women and their young children was used as an incentive. A pre-intervention baseline survey was conducted in a cross-sectional face-to-face approach using structured and standardised questionnaires in the intervention and comparison communities.

Education of women on breast cancer: The baseline knowledge on breast cancer and its practices was ascertained using structured questionnaires. Education on breast cancer was built from the known to the unknown; included modifiable and non-modifiable risk factors of

breast cancer, symptoms, measures relevant for symptom discovery, path to early detection, significance of early detection as well as late stage presentation, survival and treatment outcomes. Women were also educated on prevention measures and the need to modify their lifestyles in order to prevent the development of the disease. Educational pamphlets containing information on breast cancer were provided to the participants to serve as a reminder. Recipients were encouraged to express their concerns and ask questions on the education given to enhance understanding. All misconceptions were clarified. Breast health awareness efforts included breast health counselling about breast cancer symptoms using approach that is culturally sensitive. Teachings on Breast Self-Examination, Clinical Breast Examination (CBE) were given to enhance practicing skills. Women were further taught the right time of the examination to maximize its effectiveness. In addition, reminders and monthly sensitization activities in collaboration with breast cancer survivors were conducted in the intervention communities.

Breast Cancer Screening: Clinical Breast Examination was offered to asymptomatic women in the community and the family members.

Follow-up Care and Referral: Women were offered the opportunity to visit the health posts periodically for CBE. The women were encouraged to do BSE monthly, to be self-confident to report and discuss any breast-related concerns which may be discovered with their clinicians. Where necessary, the health professionals as the front-liners of the breast cancer prevention and early detection program coordinated referral network for women with or at risk of breast cancer, particularly when a suspicion is identified, to enable timely diagnosis and prompt treatment.

At the conclusion of the intervention, 6 months after the baseline survey was concluded, reminders for follow-up were sent to participants in both trial arms at the end of study and again, drugs for common ailments was used as incentives. Follow-up survey was done to determine the participant's ability to accept and practice what was communicated. The post-intervention survey was conducted for the two groups assessing for uptake of breast cancer screening and intention to screen. Recall scores which assessed status of knowledge gain based on the education given was assessed. A five-point Likert scale (from strongly agree to strongly disagree). The scale was developed in English language, then translated in Igbo, which is the native dialect. Face and content validation was done. Participants were awarded one point for each correct response and zero points for each wrong or "do not know" response on items related to knowledge. The maximum score was 22.

III. Ethical Approval and Consent to Participate

Ethical approval was sought from the Health Research Ethics Committee of Imo State University, Owerri and from the State Ministry of Health. Permission to undertake the study was obtained from relevant stakeholders in the zones and respective communities. Written informed consent was obtained from all participants involved in the study. The methods used in this study were performed in accordance with approved guidelines. The study was carried out in compliance with the Nigerian National Code for Health Research Ethics and the Declaration of Helsinki.

IV. Data Analysis

In order to realize the objectives of the study, basic socio-demographic characteristics was summarized using descriptive statistics. Continuous variables were summarized using mean, median, mode, range and standard deviation. Percentages and frequencies were calculated for the categorical variables. Chy-square and logistic regression were used to determine difference in breast cancer screening uptake in the intervention and comparison communities post study. Independent T-test was used to compare recall scores of knowledge gain for the intervention and comparison groups post study. Data analyses were performed using IBM Statistical Package for Social Sciences Version 20.

V. RESULTS

A total of 780 women were enrolled in the study, 390 in the intervention group and 390 women in the comparison group. The sociodemographic characteristics of the participants in both communities are as presented in Table 1. Uptake of breast cancer screening in both intervention and comparison groups at follow-up is shown in table 2. Recall scores which assessed status of knowledge gain at the end of the study is presented in table 3. Result of Independent T-test comparing recall scores between the intervention and comparison groups is shown in Tables 4a and b. Following Clinical Breast Examination, 12.5% of women were found to have suspicious lesions like cysts, fibroadenomas, mastitis, mastalgias and probable breast cancer, hence were linked for further diagnostic work-up and treatment.

Table 1: The sociodemographic characteristics of the participants.

Variable	Intervention(n=390) n(% within Group)	Comparison(n=390) (%withinGroup)	Total (n=390) n Cummulative(%)
Age (years)			
18-39	72 (18.5)	77 (19.7)	149(19.1)
40-59	123 (31.5)	96 (24.6)	219 (28.1)
60-79	150 (38.5)	197 (50.5)	347(44.5)
80 and Above	45 (11.5)	20 (5.2)	65 (8.3)
Total count (%)	390 (100)	390 (100)	780(100)
Marital Status			
Single	57 (14.6)	50 (12.8)	107 (13.7)
Married	252 (64.6)	289 (74.1)	541 (69.4)
Divorced/Separated	36 (9.2)	17 (4.4)	53 (6.8)
Widowed	45 (11.5)	34 (8.7)	79 (10.1)
Total count (%)	390 (100)	390 (100)	780 (100)
Occupation			
Student	40 (10.3)	20 (5.1)	60 (7.7)
Farmer	77 (19.7)	119 (30.5)	196(25.1)
Civil/Public servants	105 (26.9)	77 (19.7)	182(23.3)
Business/Self-Employed	97 (24.9)	115 (29.5)	212(27.2)
Unemployed	36 (9.2)	29 (7.4)	65 (8.3)
Retired	35 (9.0)	30 (7.7)	65 (8.3)
Total count (%)	390 (100)	390 (100)	780 (100)
Educational Level			
No formal Education	45 (11.5)	52 (13.3)	97 (12.4)
Primary Level	112 (28.7)	160 (41.0)	272(34.9)
Secondary Level	138 (35.4)	136 (34.9)	274(35.1)
Tertiary Level and Above	95 (24.4)	42 (10.8)	137(17.6)
Total count (%)	390 (100)	390 (100)	780 (100)
Perceived Socio-economic Class			
Upper Class	40 (12.3)	28 (8.5)	68 (8.4)
Middle Class	127 (32.1)	115 (29.5)	240(30.8)
Lower Class	223 (55.6)	247 (62.0)	470(60.8)
Total count (%)	390 (100)	390 (100)	780 (100)

Sociodemographic characteristics of the participants
Sociodemographic characteristics of the participants in the intervention and comparison groups were comparable across the characteristics with slight differences in proportion. For instance, 5.2% of participants in the intervention group were 80years and above while 11.5% were 80 years and above in the comparison group. The age of the participants ranged from 18 to >80years. The modal age range was 60-75 for all respondents. Most of the participants were married across intervention and comparison groups (69.4%) with more married women in the comparison group (74.1%) than the intervention group (64.6%). The proportion of single women who participated in both groups was 13.7%, while 6.8% and 10.1% were divorced/separated and widowed respectively The participants reported business (27.2%), farming (25.1%) and civil/public service (23.3%) as their occupation while the others were students (7.7%), the unemployed (8.3%) and retired (8.3%). There were more students in the intervention communities (10.3%) than the comparison communities (5.1%). While 34.9%, 35.1%, 17.6%, and 12.4% participants in both trial arms had primary, secondary, tertiary level education and no formal education respectively; the proportion with

tertiary and above level education were more in the intervention (24.4%) than in the comparison group (10.8%). Majority of the participants belonged to the lower socioeconomic class (60.8%), 30.8% were of middle class and 8.4% were of upper class. This is in keeping with a community-based intervention trial conducted in urban community in Korea.[23] which showed similar socio-demographic variables among participants in the intervention and control cities. There was no significant age difference between study samples in the intervention and control cities. However, there were more married women in the intervention city at the follow-up, and women in the comparison city had lower levels of educated at both baseline and follow-up. While there were more employed women in the intervention city at baseline, more employed women were in the sample of the comparison city at the follow-up.

The proportion of women found to have suspicious findings following breast cancer screening and early detection trial in the intervention and comparison communities was 12.5%; hence were linked for further diagnostic work-up and treatment. A cluster randomised trial in Trivandrum district.[24] found 17.4% women

having suspicious lesions that warranted further investigations.

Table 2: Uptake of Breast Cancer Screening in both Intervention and Comparison Groups.

Uptake of Breast Cancer Screening at End of Study	Study Group		Total	*P*
	Intervention	Comparison		
SBE only				
Count	16	42	58	
% within Uptake	27.6%	72.4%	100%	
% within Group	4.1%	10.8%	7.4%	
CBE only				
Count	17	76	93	
% within Uptake	18.3%	81.7%	100%	
% within Group	4.4%	19.5%	11.9%	
SBE and CBE				
Count	167	101	268	
% within Uptake	62.3%	37.7%	100%	
% within Group	42.8%	25.9%	34.4%	0.00
Intension to do Mammography				
Count	177	49	226	
% within Uptake	78.3%	21.7%	100.0%	
% within Group	45.4%	12.6%	29.0%	
No Intension to do Mammography				
Count	4	29	33	
% within Uptake	12.1%	87.9%	100.0%	
% within Group	1.0%	7.4%	4.2%	
Never Screened				
Count	9	93	102	
% within Uptake	8.8%	91.2%	100%	
% within Group	2.3%	23.8%	13.1%	
Total				
Count	390	390	780%	
% within Uptake	50.0%	50.0%	100.0%	
% within Group	100.0%	100.0%	100.0%	

Uptake of Breast Cancer Screening

Findings in this study showed marked increase in uptake rate of breast cancer screening at follow-up which was made readily available and accessible in the intervention and comparison communities alike as against the status quo at baseline. The uptake of breast cancer screening, an outcome variable, showed varying results showing with more uptake among participants in the intervention group. The results showed 161 (42.8 %) of the women in the intervention group took up self-breast examination and clinical breast examination as against 101 women (25.9%) in the comparison group. A total of 177 women (45.4%) had intention to do a screening mammography at specified time whereas 49 (12.6%) women in the comparison group had the intention. Nine (2.3%) of the participants in the intervention group received none of breast cancer screening options availed by the study whereas 98 women (23.8%) in the comparison group never screened. There was significant difference in the uptake rate of breast cancer screening offered to participants in the intervention and comparison communities with a P-value of 0.000, hence a refusal to accept the null as hypothesized.

Non-randomised experimental trial in Dallas observed improvements in CBE for the intervention and control groups with 39% of intervention participants reporting having a CBE in the previous year at baseline compared with 63% at follow-up; these proportions for controls were 30% at baseline and 62% at follow-up), but the improvements were not different between the group.[38] The finding of comparable improvement in both the intervention and control groups negates the finding in this study where appreciable increase in uptake rate was noticed in both the intervention and comparison groups; more in the intervention group where 161 (42.8 %); of the women in the intervention group took up BSE and CBE; and 177 (45.4%) had intention to do a screening mammography at specified time in the future with only 9 (2.3%) of the participants in the intervention group receiving none of the breast cancer screening options availed by the study. When compared with the uptake in the comparison groups, 101 women (25.9%) of the women took up SBE and CBE, 49 (12.6%) women had intention to do a screening mammography at specified time in the future while 98 women (23.8%) in the comparison group never screened.

Table 3: Recall Scores Showing Status of Knowledge gained by Participants in the Intervention and Comparison Groups.

| Recall Scores | Status of Knowledge Gained | Study Group | | Total |
		Intervention n=390 n (%)	Comparison n=390 n (%)	
0-5	Very poor	6 (1.5)	42 (10.8)	48 (6.8)
6-10	Poor	25 (6.4)	127 (32.6)	152(19.5)
11-15	Moderate	42 (10.8)	153 (39.2)	195(25.0)
16-20	Good	169 (43.3)	49 (12.6)	218(27.9)
>20	Very good	148 (37.9)	19 (4.9)	167(21.4)
Total		390 (50.0)	390 (50.0)	780 (100.0)

Table 3a: Independent Sample T-test Comparing Recall Scores Between the Intervention and Comparison Groups.

Group Statistics	Study Group	N	Mean	Std. Deviation	Std. Error Mean
Recall Scores Post- Study	Intervention Group	390	4.10	.935	.047
	Comparison Group	390	2.68	.989	.050

Table 3b: Independent Sample T-test Comparing Recall Scores Between the Intervention and Comparison Groups.

| Independent Sample Test | Test for Equality of Variances | | | | | t-test for equality of Means | | | |
	F	sig	t	Df	Sig (2 tailed)	Mean Difference	Standard Error Difference	95% CI Lower	Upper
Recall Scores	7.877	0.05	20.533	778	.000	1.415	0.69	1.280	1.551

Recall Scores Showing Status of Knowledge gain in the Intervention and Comparison Group

Recall scores at follow-up were significantly increased in the intervention communities. Follow-up was complete for 98% of intervention participants and 92% of the comparison group. A five-point Likert scale (from strongly agree to strongly disagree), which elicited the knowledge gain, another outcome variable, following the intervention with score of 22 as maximum score. The scores revealed the status of knowledge gain following the trial and the proportion of the participants with good and very good knowledge of breast cancer were notably higher in the intervention group than the comparison group. While 25 (6.5%) and 127 (32.6%) of the participants in the intervention and comparison groups respectively had poor knowledge status with recall score of 6-10. While 42 (10.8%), 169 (43.3%) and 148 (37.9%) of the participants in the intervention group had moderate, good and very good knowledge status on breast cancer with corresponding recall scores of 11-15, 16-20 and >22; 153 (39.2), 49 (12.6%) and 19 (4.9%) of the participants in the comparison group had moderate, good and very good knowledge status on breast cancer following the trial. Furthermore, 6 (1.5%) and 42 (10.8%) of the participants in the intervention and comparison groups respectively, had a recall score of 0-5 with the status of knowledge gain rated as very poor.

An independent-sample t-test conducted to compare the recall scores which depicted the status of knowledge gain for the intervention and comparison groups found significant differences (t [df]) = (20.533[778]), P = 0.000 in the scores with mean score for the intervention group (M= 4.10, SD =.935) higher than the comparison group (M= 2.68, SD = .989). The magnitude of the differences in the means = 1.415, (95% CI; 1.280 to 1.551) was significant. Hence, H1 was supported and H0 failed to be rejected.

The findings in this study are in keeping with the cluster randomised community trial in Korea where the differences in average recall scores between baseline and follow-up were greater in intervention city for all campaign activities.[23] Another community-based study in south Dallas wherein after controlling for baseline breast cancer knowledge scores, women in the intervention group had, on average, a 0.72-unit higher breast cancer knowledge score compared with women in the control group (p = .003).[27]

VI. Limitations of the Study

The six-month duration of the study could have been too short to sufficiently impact the community adequately in order to bring about the behaviour change towards breast cancer screening. Longer study duration and inclusion of more communities may have been more impactful.

Again, results based on the outcome of the study cannot be easily generalised to all the communities because only a fraction of the total population was studied. More studies including more communities may likely yield more generalizable results.

VII. CONCLUSION

There were poor breast cancer screening practices among participants in the intervention and comparison groups at baseline with significant improvement in outcome measures at the end of study, marked among participants in the intervention group. The breast cancer early detection intervention successfully improved all the outcome measures: knowledge related to breast cancer, uptake of breast cancer screening- in the communities; and intention to do mammography at specified time in the future.

VII. RECOMMENDATIONS

In order to effectively roll out Nigeria National Cancer Control Plan relating to breast cancer, there is need to incrementally improve early detection work-up in communities. Government, organisations and well-spirited individuals need arise to implement early detection program. Educational efforts need be continued and further expanded to the rest of the populace to increase knowledge and timely uptake of breast cancer screening. Screening opportunities need be made readily available and accessible for improved breast health and concerted fight against cancer scourge. Government at all levels, need to make facilities and expertise for mammography, and other healthcare needs, increasingly available.

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