



**A STUDY ON ASSESSMENT OF BEHAVIOURAL CHANGE WITH REGARD TO EARLY DETECTION OF BREAST CANCER THROUGH EDUCATIONAL INTERVENTION FOCUSED ON ASHAs**

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**ABSTRACT**

**Introduction:** Breast cancer is the commonest cancer among women in India and account for 19-34% of all cancer cases. (7-9) By 2030, there would be about 2.39 million incident cases of breast cancer worldwide of which 214,150 cases would be in India.(3) Late diagnosis is a major factor for high mortality in India. This is attributed to lack of awareness and non-existent breast cancer screening programs.(6) Training ASHAs to bring about behaviour change in women may be a strategy which is sustainable, effective and acceptable to the local community. Therefore, this study was done to assess if an educational intervention through ASHAs would lead to positive behaviour change.

**Material & Methods:** A community based educational intervention study was done in Chennanellore Panchayat of Ernakulam district in Kerala. Three out of nine wards were randomly selected and a baseline survey was conducted relating to breast cancer. Following this, an educational intervention was given to the ASHA workers, who then conducted health education classes in the study area. Three months later, an endline survey was conducted. **Results:** Mean age of the 219 respondents was 41.28±11.58 years. Though 95.7% had heard about breast cancer and 55.7% were aware of self-breast examination, only 21.5% practiced the same. Majority of women (98.8%) had a positive attitude towards treatment. Post intervention there was significant increase in awareness and practice of self-breast examination; 78.5% of the study population was aware and 53.9% practiced self-breast examination post the intervention. Practice of self-breast examination was significantly associated with awareness about it.

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**INTRODUCTION**

Cancer of the breast in women is a major health burden worldwide. It is responsible for 1.8 million of the estimated 14.9 million neoplasms diagnosed worldwide. It is also the primary cause of cancer death among women globally, responsible for about 471,000 deaths in the year 2013.(1) Unlike other cancers, Breast cancer is visible and can be detected and treated at an early stage.(2)

India faces a potential breast cancer epidemic over the next decade as women adopt western lifestyles by marrying and bearing children later in life, having fewer children and shorter duration of breast feeding. GLOBOCAN projects that, by 2030 there would be about 2.39 million incident cases worldwide of which 214,150 cases would be in India.(3)

Breast cancers can be detected through techniques like Breast Self-Examination (BSE), Clinical Breast Examination (CBE) and Mammography.

BSE is an inexpensive technique for women to identify any changes in their own breast. Unfortunately, patients seek medical advice when the disease is fairly advanced.(4) In India the incidence/mortality ratio is 0.48 compared to 0.25 in North America.(5) Late diagnosis is a major factor for this high mortality as most patients present in advanced stage of the disease. This is attributed to lack of awareness and non-existent breast cancer screening programs in India.(6)

According to National Cancer Registry, Breast cancer is the commonest cancer among women in India and account for 19-34% of all cancer cases.(7-9) It is known that breast cancer is curable only if detected in the early stages. Hence, awareness is pre requisite for early diagnosis and prompt and proper treatment of this problem, especially in high risk groups.

In India there is no established programme for early detection of breast cancer by community members and there exists negligible focus on these issues in basic health care delivery systems including primary health care services. There is a dire need for tailored community based strategies for prevention & control of breast cancer. Talking on issues such as breast cancer or going to hospital for clinical examination are culturally sensitive issues for many women in India, especially

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for rural women and for those belonging to low socio economic status in urban areas. The question arises as to what kind of strategies can be adopted for behaviour change which is sustainable, effective and acceptable to the local community. There are many possible ways to address these issues, but it is imperative to find measures without causing much strain on the existing systems as our resources are limited.

In this perspective, we feel that the ASHAs (Accredited Social Health Activist, a trained female health worker under National Rural Health Mission) can be a good option as the population covered by the ASHA worker is well-defined and these topics can be freely discussed among women beneficiaries during their home visits and general health education sessions. There is one ASHA for every 1000 population working under the close supervision and guidance of JPHNs of the concerned PHCs. These ASHAs can be trained through JPHNs using ToT approach for ensuring sustainability. Considering the above mentioned aspects it is felt that trained ASHAs can be ideal peripheral health workers for getting across the messages to the large proportion of women in our community who may be left out of sophisticated broader programmes. (10, 11) It is an important felt need to prepare ourselves for combating this escalating public health issue. Therefore, this study was done to assess if an educational intervention to ASHAs would lead to positive behaviour change relating to early detection of breast cancer among the women in the community.

## MATERIAL AND METHODS

A community based educational intervention study was done in Cheranellore Panchayat of Ernakulam district in the state of Kerala in Southern India. The Panchayat having a population of 48,187 has one Primary health centre, under which there are four sub-centres within the administrative area of the panchayat. The sub-centre is the most peripheral formal health institution and the ASHA (Accredited Social Health Activist) who is non-formal community health worker function as the link between the community and the health system. In the said Panchayat area which has nine wards, there are a total of 17 ASHAs who work under the guidance of the Junior Public Health Nurses of the four sub-centres.

The study included women aged 20 years and above and in situations where there were more than one eligible study participant in a household, only one was selected by lottery method. Households that were found to be locked in the initial visit were visited again the following day, and households found locked on the second visit also were excluded from the study.

**Sample size:** Based on a study done in Kannur district of Kerala which reported that 30% of the participants were practicing self-breast examination (12), the minimum sample size was calculated to be 223 using the formula  $n = \frac{DEFF * N * p(1-p)}{[(d^2/Z^2_{1-\alpha/2} * (N-1) + p * (1-p))]}$  with 95% confidence, 20% allowable error, DEFF of 1 and applying finite population correction factor.

**Data Collection:** For the study, three out of the nine wards were randomly selected. A base-line survey of the selected wards was conducted which assessed the awareness, attitude and practice of early detection measures relating to breast cancer among the study participants. In each ward, the major junction was visited and a random direction was chosen by spinning a bottle. All households in that direction were visited

sequentially and eligible study participants were enrolled in the study till 1/3<sup>rd</sup> of the sample i.e. 75 was met in each ward.

Following this, an educational intervention was given to the ASHA workers of the same community. They were trained to function as trainers. The standardized training module included topics on epidemiology of breast cancer, the importance and measures of early detection, management, prognosis and behaviour change communication strategies. Regular feedback was also taken to improve the training module. Then, the trained ASHAs were expected to conduct health education classes in the study area through individual and group health education methods to disseminate awareness on Breast cancer and its early detection methods. To ensure the sustainability of the intervention, active participation of JPHN was ensured who provided both supervision and guidance to the ASHAs. Three months after the training of the ASHAs, an endline survey of the same study participants was conducted to assess the change. A semi-structured questionnaire consisting of questions on socio-demography, knowledge, attitude and practice of early detection measures of Breast cancer was used for both the baseline and endline surveys. Baseline and endline data was compared to see the effect of intervention in improving knowledge and practices of early detection methods of breast cancer in the community. *Statistical analysis:* Data was tabulated in MS EXCEL and analysed using IBM Statistical Package for Social Science (SPSS) version 20. Descriptive statistics such as frequency, mean and standard deviation were used to summarize data and statistical significance was tested using paired t test and chi square test.

*Ethics:* Ethical approval was obtained from the Institution Ethics Committee. An informed and written consent was also obtained from the study participants.

## RESULTS

A total of 219 respondents were included in the study; 73 from each ward. Table 1 shows the socio-demographic profile of the study population. The mean age of the respondents was 41.28±11.58 years with more than half (53.4%) being over 40 years of age. Majority of the women interviewed were married (95.4%) and homemakers (86.8%).

**Table 1** Socio demographic profile (N =219)

Characteristics	Number	Percentage
Age		
20-30 yrs	52	23.7
31-40 yrs	50	22.8
>=41 yrs	117	53.4
Education		
Degree	60	27.4
Higher secondary	45	20.5
High school	95	43.4
Middle school	11	5
Primary school	7	3.2
Illiterate	1	0.5
Occupation		
Housewife	190	86.8
Skilled	21	9.6
Student	8	3.7
Marital status		
Married	209	95.4
Unmarried	9	4.1
Widow	1	0.5
Monthly family Income (in Rs.)		
<2000	120	54.8
>=2000	99	45.2

In the baseline survey it was found that though 95.7% had heard about breast cancer and 55.7% were aware of self-breast examination, only 21.5% practiced the same. Clinical breast examination or mammogram, were done by only 2.9% of the women. About one-tenth (10.3%) in fact had a positive family history of breast cancer. Majority of the women also did not know the risk factors (64%) nor did they know its symptoms (68.5%). Though 31.9% of the respondents were not aware that breast cancer could be cured, 98.8% answered that they would have a positive attitude towards its treatment in the event of its occurrence. Of the 219 women in the study, only 67 (30.6%) had ever attended any awareness class on breast cancer prior to the study.

Table 2 shows the change in the factors assessed pre and post intervention. Post the intervention there was significant increase in awareness and practice of self-breast examination as well as awareness of other early detection measures such as mammogram and clinical breast examination. More than three-fourth (78.5%) of the study population were aware and more than half (53.9%) practiced self-breast examination post the intervention.

**Table 2** Comparison of variables pre and post intervention

Variable	Pre n(%)	Post n(%)	P value
Awareness of BSE			
Yes	122(55.7)	172(78.5)	<0.001
No	97 (44.3)	47 (21.5)	
Awareness of mammogram			
Yes	79(36.1)	139(63.5)	<0.001
No	140(63.9)	80(36.5)	
Awareness of CBE			
Yes	79(36.1)	152(69.4)	<0.001
No	140(63.9)	67(30.6)	
Practice of BSE			
Yes	47(21.5)	118(53.9)	<0.001
No	172(78.5)	101(46.1)	

Table 3 and 4 shows the association of awareness and practice of BSE with various socio-demographic variables.

**Table 3** Association between awareness of BSE and socio demographic variables

Socio demographic variables	Awareness of BSE		P value	
	YES	NO		
Age	20-30 yrs	39(75)	13(25)	0.519
	31-40 yrs	42(84)	8(16)	
	>=41 yrs	91(77.8)	26(22.2)	
Level of Education	High	50(83.3)	10(16.7)	0.014
	Middle level	112(80)	28(20)	
	Low level	10(52.6)	9(47.4)	
Occupation	House wife	149(78.4)	41(21.6)	0.003
	skilled student	20(95.2)	1(4.8)	
Monthly family income (in Rs.)	<2000	94(78.3)	26(21.7)	0.94
	>=2000	78(78.8)	21(21.2)	

Statistically significant association was seen between awareness of BSE and higher education level and occupation. Similarly statistically significant association was seen between practice of BSE and age as well as occupation. Also, practice of self-breast examination was significantly associated with awareness of it.(Table 5)

**Table 4** Association between practice of BSE and socio demographic variables

Socio demographic variables		Practice BSE		P value
		YES	NO	
Age	20-30 yrs	20(38.5)	32(61.5)	0.018
	31-40 yrs	33(66)	17(34)	
	>=41 yrs	65(55.6)	52(44.4)	
Level of Educational Status	High	35(58.3)	25(41.7)	0.113
	Middle level	77(55)	63(45)	
	Low level	6(31.6)	13(68.4)	
Occupation	House wife	102(53.7)	88(46.3)	0.017
	skilled student	15(71.4)	6(28.6)	
Monthly family income (in Rs.)	<2000	67(55.8)	53(44.2)	0.52
	>=2000	51(51.5)	48(48.5)	

**Table 5** Association between practice and awareness of BSE

Awareness	Practice		P value
	Yes	No	
Yes	118(68.6)	54(31.4)	<0.001
No	0(0)	47(100)	

## DISCUSSION

The study was conducted to assess if training the community health workers could improve the awareness and practice of early detection methods for Breast cancer among women in the community. The awareness and practice of BSE increased by 22.8% and 32.4% respectively. Awareness of mammogram and CBE also increased by 27.4% and 33.3% respectively. This shows that dissemination of knowledge has taken place.

Kerala is a state which has the highest female literacy (91.98%) rate in India and this is attributed as one of the reasons for its better health indices.(13) But in spite of a high female literacy rate, the awareness on breast cancer is low as reported in studies done in the same district as well as other districts of the state.(12,14) A study conducted on a cohort of dental students in India also showed that the knowledge as well as their attitude towards BSE was poor indicating that higher educational status may not always be associated with increased knowledge.(15) This was in contrary to the finding in this study where awareness was associated with higher educational status.

A similar study done in a semi-urban area of Madhya Pradesh, but in which the intervention was directly on the women in the community also showed a significant improvement in knowledge and practice of BSE.(16) Awareness classes aimed at the general population would not only be resource intensive but also time consuming. Hence training the community workers to disseminate the information is cost-effective and also the community is more likely to adopt the behavior as the information is shared by one of their own.

Screening methods to diagnose breast cancer include Self-breast examination, clinical breast examination and Mammogram. A Cochrane review had reported that regular self-examination of breast did not have any beneficial effect in terms of reduction in breast cancer mortality.(17) But this

review had taken into account only two population based studies done in developed countries. There is dearth of studies in developing country settings. An interim analysis of a cluster-randomized controlled trial in Mumbai reported that the difference in mortality between the clinical breast examination arm and the health education arm was not statistically significant yet but downstaging of breast cancer had reached significant levels in the third round.(18)

WHO states that though there is no evidence to support self-breast examination, it is still recommended as it empowers women to take responsibility of their own health.(19) WHO also states that raising the awareness of the general public is a key population-based cancer control strategy. In a developing country like India with competing priorities and limited resource allocation for health, investing in strategies like training of trainers to increase awareness can prove to be cost-effective. Our study provides evidence for the same. However this needs further research.

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