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Awareness and Ability Regarding Breast Self-Examination (BSE): A Interventional Study in Rural Area Haryana

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Abstract: ***Breast Cancer is a life threatening disease affecting women. Awareness should be created among women regarding breast self examination for early detection of breast cancer. The study was aimed to assess and compare the awareness and ability regarding breast self examination among women in rural area. Materials and Methods: Quasi experimental study was carried out among a total sample of 80 women (40 experimental and 40 comparison group of age group 20-40 years) in rural area. Structured knowledge questionnaire and observation checklist was used for data collection. Result: There were lack of awareness and ability regarding breast self examination. The main reason of not performing the breast self examination were; Being afraid of being diagnosed with breast cancer, don't know how to perform BSE, no complaint in breast and no time to perform There was significant difference between awareness and ability score in experimental group than comparison group. The level of awareness of breast self examination was highest in experimental group than comparison group. Conclusion: In present setting post educational program not only improve women awareness but also improve the ability to perform. The result suggests the need of continuing educational program to be aware and motivate to perform the BSE.***

Keywords: breast self examination, awareness, ability, rural area

1. Introduction

Cancer is the leading causes of death worldwide. The number of people living beyond a cancer diagnosis reached nearly 14.5 million in 2014 and is expected to rise to almost 19 million by 2024. Among women the 5 most common sites diagnosed were breast, colorectal, lung, cervix, and stomach cancer.[1]

More than one million women are estimated to be diagnosed with breast cancer every year.Most of the Asian countries are low- and middle-income countries, where access to effective care is limited. Because of late detection and inadequate access to healthcare, survival of women with breast cancer in Asia is lower than in western countries.[2]

The World Health Organization (WHO) has suggested that two components of early detection of cancer mortality

- Education—it helps people to recognize early signs of cancer and go for medical consultation for symptoms.
- Screening programs—it helps in identifying early cancer or pre-cancer before signs are recognizable, including BSE, mammography for breast cancer.[3]

Implementation of the preventive measures has been acknowledged as the main tool in the fight against breast cancer worldwide. Globally, breast self-examination (BSE), clinical breast examination (CBE) and mammography is the recommended screening test for early detection of breast cancer. Due to lack of access to diagnostic facilities, especially for women in constrained surroundings, it becomes essential to empower them with BSE as a primary mode for screening.[4]

Although BSE is simple, quick, cost free and non-invasive procedure, less than 50% practice it regularly in spite of having knowledge. The American Cancer Society recommends monthly BSE for all the women who are 20 years or older. However Breast Cancer Care states that women should start being breast aware from the age of 18 years and should continue their breast checks regularly throughout their life.[5]

Breast cancer is one of the common cause of death so BSE can be used as an important tool for primary prevention of breast cancer, where sophisticated method like screening mammography for general public cannot afford.[6]

BSE is an effective tool to make women aware about breast cancer and direct them to consult with doctor early. This screening method can be performed without the assistance of health professionals and requires no special equipment.[7]

Breast self-examination benefits women in two ways. Women become familiar with both the appearance and feel of their breast and detect any changes in their breast as early as possible. Even though breast self-examination is simple, quick and cost free procedure; the practice of breast self-examination is low and varies in different countries.[7]

Routine screening for breast cancer is also not popular in India. Very few women actually know the correct method of doing breast self-examination, there is evidence that women who correctly practice BSE monthly are more likely to detect a lump in the early stage of its development, and early diagnosis has been reported to influence early treatment, to yield a better survival rate .[8]

Therefore the objective of the study was to assess and compare the awareness and ability regarding breast self examination among women in experimental and comparison group and to identify the associated factors.

2. Materials and Methods

This study was conducted in village Mullana and Suhana of district Ambala Haryana which were selected by convenience sampling and divided in to experimental and comparison group by lottery method and houses were selected by simple random table. Due to time constrain total 80 women (40 experimental and 40 comparison group of age group 20-40 years) were selected for the study by purposive sampling method. Data was collected through structured knowledge questionnaire. Paper pencil technique was used to collect data. Pre test and post test were used to evaluate the awareness and ability regarding BSE.. The questionnaire was translated to hindi language The reliability of the instrument was calculated. For observation checklist the inter-observer reliability was established. The ability of each woman was observed and recorded on structured observation checklist. Reliability was computed by using simple inter-observer Reliability. Which came out to be 0.9 (acceptable range is 0.7 to +1).

The Reliability of structured knowledge questionnaire was checked by Kuder Richardson-20 which came out to be0.83. The acceptable range is 0.7 to 1. Thus the tool found to be reliable.the questionnaire consisted of two sections,: section A consist of selected variable and section B was composed of 30 knowledge questionnaire covering the following content : Breast cancer, sign and symptom and prevention

Technique and steps of Breast self examination

The test items are objective type .All 30 items were multiple choice items. Each item has single correct answer. Each correct answer was given a score of one and each wrong answer a score zero.

For experimental group On day 1st, self introduction and introduction of study was given to women. Informed consent was obtained from them and they were assured about confidentiality of their response. Pre test was conducted in which awareness and ability was assessed by structured questionnaire and observation checklist. On day 2, after pre test, educational program (demonstration, video based teaching and lecture by flex board) on Breast Self Examination (duration 40-45 minutes) was given to women(experimental group), after that return demonstration was taken from women until they performed the steps of BSE correctly at least once. On day 15th post test I and 30th post test II was conducted on awareness and ability by structured questionnaire and observation checklist and feedback on deficit areas were provided to the women individually. Firstly pre test of comparison group was completed and then pre test of experimental group was carried out.

Comparison group On day 1st, introduction of study was given to women. Informed consent was obtained and they were assured about confidentiality of their response. Pre test was conducted in which awareness and ability was assessed by structured questionnaire and observation checklist.

On day 15th post test I and On day 30th post test II was conducted on awareness and ability by structured questionnaire and observation checklist. No special education was given to these women and as a part of standard treatment teaching regarding BSE was given to comparison group after data collection.

Ethical clearance: Ethical clearance was taken from university ethical committee for conducting the study and sarpanch of village to conduct the final study. The research participants were enrolled in the study after written informed consent and they were assured about the confidentiality of their response and privacy during return demonstration.

Data analysis : Statistical analysis was done by using statistical package for social science software program (SPSS) version 20 to calculate frequency ,chi square test, t-test, ANOVA to test association with selected variables.

3. Results

A total number of 80 women selected and their demographic and personal variables are presented in Table 1

Table 1: Frequency and percentage distribution of selected variables

S. No.	Sample Characteristics	Comparison Group Frequency (%) (n=40)	Experimental Group Frequency (%) (n=40)	Total N (%)	Chi square /Yates	df	p-value
1	**Age (in years)**						
1.1	20-25	13(32.5)	21(52.5)	34(42.5)			
1.2	26-30	14(35)	11(27.5)	25(31.25)	4.69	3	0.19 NS
1.3	31-35	1127.5)	05(12.5)	16(20.0)			
1.4	36-40	02(5.0)	03(7.5)	05(6.25)			
2	**Type of family**						
2.1	Nuclear	22(55)	29(72.5)	51(63.75)			
2.2	Joint	17(42.5)	10(25)	27(33.75)	2.78	2	0.25 NS
2.3	Extended	01(2.5)	01(2.5)	02(2.5)			
3	**Religion**						
3.1	Hindu	38(95)	36(90.0)	74(92.5)			
3.2	Muslim	0.0(0)	03(7.5)	03(3.75)	28.9	2	0.00*
3.3	Sikh	02(5.0)	01(2.5)	03(3.75)			

4	**Marital status**						
4.1	Single	14(35.0)	23(57.5)	37(46.25)			
4.2	Married	26(65.0)	15(37.5)	41(51.25)	7.14	2	0.028*
4.3	Divorced	00(0.0)	02(5.0)	02(2.5)			
5.	**Age of menarche**						
5.1	9-11years	03(7.5)	07(17.5)	10(12.5)			
5.2	12-14 years	27(67.5)	25(62.5)	52(65)	1.90	2	0.38 NS
5.3	15-17years	10(25)	08(20.0)	18(22.5)			
6	**Educational status of women**						
6.1	Secondary	14(40.0)	08(20.0)	22(27.5)			
6.2	Senior Secondary	1635.0)	12(30.0)	28(35)	6.85	2	0.33NS
6.3	Graduate or above	10(25.0)	20(50.0)	30(37.5)			
7.	**Occupation**						
7.1	Student	12(30.0)	16(40.0)	28(35)			
7.2	Self employed	0.0(0.0)	05.0(12.5)	05(6.25)			
7.3	Farmer	01(2.5)	01.0(2.5)	02(2.5)	10.4	4	0.034*
7.4	Home maker	27(67.5)	16(40.0)	43(53.75)			
7.5	Civil servant	00(0.0)	02.0(5.0)	02(2.5)			
8	**Ever heard about BSE**						
8.1	Yes	18(45.0)	20(50.0)	38(47.5)	0.201	1	0.065NS
8.2	No	22(55.0)	20(50.0)	42(52.5)			
9	**Source of information**						
9.1	Books	03.0(7.5)	05(12.5)	08(10)			
9.2	Internet ,TV, Radio	16(40.0)	07(17.5)	23(28.75)	11.9	4	0.018*
9.3	Friends	01(2.5)	04(10.0)	05(6.25)			
9.4	Other	00(0.0)	06(15.0)	06(7.5)			
9.5	None of these	20(50)	18(45.0)	38(47.5)			
10.	**Do you have any of habit**						
10.1	Smoking	03(7.5)	01(2.5)	04(5)			
10.2	Drinking	02(5.0)	01(2.5)	03(3.75)	2.56	3	0.465NS
10.3	Any other	01(2.5)	00(0.0)	01(1.25)			
10.4	No habit	34(85	38(95.0)	72(90)			
11.	**Any history of breast problem**						
11.1	Yes	02(5.0)	01(2.5)	3(3.75)	0.346	1	0.55 NS
11.2	No	38(95.0)	39(97.5)	77(96.25)			
12.	**Do you perform BSE**						
12.1	Yes	03(7.5)	06(15.0)	9(11.25)			
12.2	No	37(92.5)	34(85.0)	71(88.75)	1.13	1	0.288NS
	If yes, how frequently or when						
	When I have time	03(100)	06(100)	9(11.5)			
	If no, specify reason of not performing BSE						
	don't know how to perform BSE	32(86.48)	31(91.17)	63(78.75)			
	no complaint in breast and no time to perform	05(15.62)	03(8.82)	08(10)			
13	**Is Breast Self Examination important**						
	Yes	28(70)	32(80.0)	60(75)			
	No	12(30)	08(20.0)	20(25)	1.0.7	1	0.302NS
13.1	**If yes specify why it is important**						
13.2	aware about the breast problems	22(78.57)	28(87.5)	50(62.5)			
	it help to identify the breast cancer in early stage	06(21.42)	04(12.5)	10(12.5)			
	If no, specify reason						
	No complaint in breast	07(58.3)	06(75)	13(16.25)			
	Being afraid of being diagnosed with breast cancer	05(41.66)	02(25)	07(8.75)			

Table 1 shows that less than half (42.5%) of the subjects were in the age group of 20-25 years. Most of the subjects (63.755%) were from nuclear family. Majority of the subjects (92.5%)were Hindu and (51.25%) were married. Age at menarche (65%) was 12-14 years. Less than half of the subjects (37.5%) were graduate or above. More than half (53.75%) of the subjects were home maker. Half of the subjects (52.5%) were never heard about BSE. Half of the subjects (47.5%) had no source of information. Majority of the subjects (90%) had no habit of smoking and drinking. Majority of the subjects (96.25%) had no history of breast problem.

Few of subjects (11.25) perform BSE. Most of the subjects (88.75%) did not perform BSE because majority of the subjects (78.75%) don't know how to perform BSE and few of subjects (10%) mentioned that they have no complaint in breast and have no time to perform. Majority of the subjects (62.5%) mentioned that BSE is important because if they perform BSE then they will be aware about the breast problems and few of (12.5%) mentioned that it will help to identify the breast cancer in early stage and few of subjects (25%) were mentioned that it is not important and most common reasons given by them were if no complaint in breast then it is not important and few of subjects (8.75%) mentioned that being afraid of being diagnosed with breast cancer.

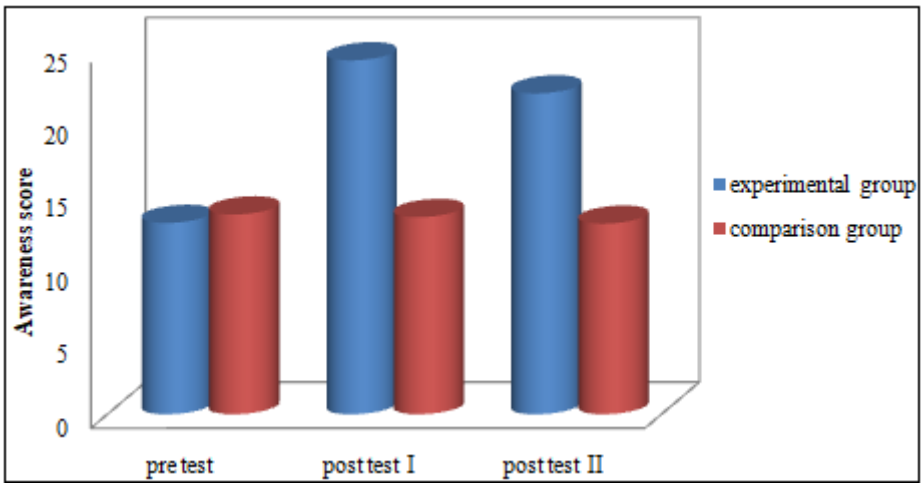

Figure 1: Illustrate that the mean pre-test and post-test awareness score regarding BSE in comparison group and experimental group

The mean pre test awareness score of comparison group (13.70±3.67) was higher as compare to experimental group (13.01±4.87).. The mean post test-1 awareness score (24.27±2.44) was higher in experimental group as compare to comparison group (13.52±3.9). The mean post test II awareness score of experimental group (22.00±3.69) was higher as compare to comparison group (13.01±4.87).

Table 2: Mean, standard deviation and F value of pre test and post test awareness score regarding BSE in experimental group and comparison group, N=80

	Group	Mean ± SD	F – value	df	P-value
Experimental group (n=40)	Pre- test Post –test Post Test-II	13.12±4.6 24.20±2.44 22.00±3.69	136.99	2/38	.00*
Comparison group (n=40)	Pre- test Post –test-I Post -test –II	13.7±1.27 13.5±6.54 13.07±4.8	.749	1/39	.392^{NS}

F (38, 39) =3.32

The data presented in table 2 showed that the calculated F value(136.99) found to be statistically significant at 0.05 level of significance in experimental group which shows that the educational program was effective in increasing the awareness regarding breast self examination. The calculated F value (.749) was found to be statistically not significant at 0.05 level of significance in comparison group. Thus the mean difference between pre test and post test was not statistically significant.

Table 3: Mean, mean difference, standard error of mean difference, 't' value, of post test awareness score between comparison group and experimental group, N=80

	Group	*Mean ±SD*	*Mean difference*	SE_{MD}	*t-value*	*p-value*
Post test -1	**E** **C**	24.27±2.44 13.52±3.98	10.75	.72	14.8	.00*
Post test -2	**E** **C**	22.00±3.69 13.07±4.8	8.93	.90	9.79	.00*

't' (df 38)=2.04
***significant(p≤0.05)**
^{NS}-Non significant

The data presented in the table 3 revealed that the mean post test-1 awareness score was (24.2±2.44) higher in experimental group than comparison group(13.52±3.98), with the mean difference of 10.75, which was found to be highly significant at 0.05 level of significance. The mean post test-1I awareness score was (22.0±3.69) higher in experimental group than comparison group (13.07±4.8) in comparison group which was found to be highly significant at 0.05 level of significance.

Table 4: Area wise mean, mean difference, standard error of mean difference and 't' value of pre test post test awareness score regarding BSE in experimental group obtained by structured knowledge questionnaire

Areas	Test	Group	Mean ±SD	Mean difference	SE_{MD}	t-value	p-value
Concept	Pre Test	**E**	4.2±2.18	.92	.37	2.4	0.18^{NS}
		C	5.12±1.8				
	Post test I	**E**	8.00±1.19	3	.347	8.64	.00*
		C	5.00±1.86				
	Post test II	**E**	7.40±1.4	3.3	.44	8.10	.00*
		C	4.10±2.2				
Sign of BC	Pre Test	**E**	3.12±1.06	.21	.28	.714	.479^{NS}
		C	2.91±1.22				
	Post test I	**E**	4.32±1.05	1.22	.211	5.5	0.00*
		C	3.10±.72				
	Post test II	**E**	3.80±1.0	.9	.26	3.2	0.02*
		C	2.90±1.2				

Steps of BSE	Pre Test	**E**	5.47±2.27	.5	.58	.724	.473[NS]
		C	5.90±2.75				
	Post test I	**E**	11.95±1.83	6.55	.39	14.7	.00*
		C	5.40±2.75				
	Post test II	**E**	6.10±3.05	5.04	.51	8.5	.00*
		C	1.06±2.5				

't'(df=38)=2.04
***significant(p≤0.05)**

[NS-]Non significant

Table 4 illustrates that the mean pre test awareness score in the area of concept, sign and symptoms and step of BSE were found to be non significant between experimental and comparison group.

The mean post test-1 awareness score in the area of concept with the mean difference of 3 was were found to be significant at P value of .05 indicates significant difference in the awareness of experimental and comparison group and in the area of sign and symptoms of breast cancer with the mean difference of 1.22 and In the area of steps of BSE with the mean difference of 6.55 was found to be significant at P value of .05 indicates significant difference in the awareness of experimental and comparison group.

The mean post test-1I awareness score in the area of concept with the mean difference of 3.3, steps of BSE with the mean difference of 5.04 were found to be significant at P value of .05 showed that the mean difference between post test I and post test II in experimental and comparison group was true difference not by chance.

Table 5: Mean, mean difference, standard, standard error of mean difference and F value of pre test and post test ability score of experimental group, N=40

Ability score	Mean ±SD	F- value	df	P-value
Pre- test	24 ±0			
Post test-1	43.02±2.18	4823.83	2/38	0.00*
Post test-II	42.17±2.21		2/38	

F (38) =3 .32
***significant (p≤0.05)**
[NS -]non significant

This table showed that the calculated F value (4823.83) was found to be statistically highly significant at 0.00 level of significance which showed that difference between pre test , post test 1 and post test 2 awareness score was true not by chance . Thus it can be concluded that the educational program was highly effective in increasing the ability of women in performing breast self examination.

As the baseline score of comparison group was not up to mark so the findings of comparison group was not mentioned.

Correlation between awareness and ability:

There was no significant positive correlation between mean post test awareness and ability score (0.166) of women regarding BSE as evident by computed 'r' value.

Association with sample characteristics

ANOVA/t value of sample characteristics with awareness and ability score was found to be non significant at 0.05 level in both the groups

4. Discussion

BSE is a technique that all women can do .Thus it is useful self care activity for all women. Regular monthly BSE is an essential health maintenance activity. It is inexpensive method of early detection of breast tumor, thus awareness and ability could protect women from severe morbidity due to breast cancer.

The results of present study revealed that main source of information regarding BSE were television (28.75%) and friends (6.25%) Similar findings were reported in observational cross sectional study conducted by DalaM. Nemenquaniet al. reveled that the main source of information regarding BSE were television (406.3%) and educational lectures.[10] And nearly half of the subjects had no source of information this is consistent with the study conducted by Sahar M.Yakout (2014) revealed that about half of the subjects had no source of information.[11]

The results of present study revealed that 27.5% had secondary education and 51.25% women were married and nearly half of the subjects had no source of information Similar findings were reported in cross sectional study conducted by laveena, the finding revealed that 30% women had an education of high school and 75% were married.[12]

This study revealed that 88.75% women did not perform breast self examination and the reason for not performing the BSE were don't know how to perform BSE, no complaint in the breast and 25% women revealed that BSE is not important and most common reasons given by women are if no complaint in breast then it is not important and being afraid of being diagnose with breast cancer. These findings were consistent with another study conducted by Mukupo, found that 95%of the respondents in rural area did not practice breast self examination. The most common reason given by women for not practicing BSE is lack of knowledge on how to perform and it was not important to do breast self examination and they did not perceive themselves as being at risk of getting breast cancer.[13] Steinberger (1994) and Ko (2000) found that the major reasons for not practicing breast self-examination was lack of knowledge on how to perform breast self-examination. Some women did not think it was important to examine themselves while others did not perceive themselves to be at risk of getting breast cancer.[14] Barton and Budden also found that many women in America gave similar reasons for not practicing breast self-examination.[15]

In present study majority of women did not practice BSE because of lack of awareness having no problem in breast and fear of being diagnosed with Breast Cancer Similar

findings were reported in cross sectional study conducted by Radhwan Ahmeed AI Naggar to assess the practice and barrier toward BSE among young women. The findings revealed that majority of women never practice BSE due to lack of knowledge, having no symptoms in breast and being afraid of being diagnosed with BC[14] . and other study conducted by Agu et al reported early detection help to save life.[16]

In the present study there was no significant positive correlation between awareness and ability score toward BSE(r =0.166& p=0.307). Similar findings were inconsistent with study conducted by M. Naemenqani Dala revealed that there was significant moderate positive correlation between total knowledge score and attitude toward BSE(r =0.449& p=0.000).[11]

In present study there was no significant association between selected demographic variable and post test knowledge score. Similar findings were reported in an interventional study conducted by Thomas Soumya to assess the knowledge on BSE among the women of reproductive age group the finding revealed that the association of knowledge score with demographic variables i.e. Age ($\chi 2$=0.098, P>0.05), Education ($\chi 2$=0.081,P>0.05), Occupation ($\chi 2$=0.617, P>0.05), Marital status ($\chi 2$=1.465, P>0.05), Monthly income ($\chi 2$=3.056, P>0.05), Source of information ($\chi 2$=0.002,P>0.05).The result of the study shows that there is no significant association between the knowledge score with selected demographic variable.[17]

In the present study educational program was effective in enhancing the awareness and ability of women, in experimental group. The mean post test awareness and ability score of women in experimental group was higher than the comparison group. Similar findings were reported in study conducted by RaoSP, revealed that the educational intervention there was significant increase in awareness regarding breast cancer (z=-15.807; P<0.001) as well as in the performance of breast self-examination 321/342 (93%).[18]

5. Conclusion

Initially the level of awareness and ability of breast self examination was low. After educational program the level of awareness and ability increased. So, the educational program was effective in enhancing the awareness and ability regarding BSE**.** The educational program was effective in improving the ability of women to perform BSE

6. Implications

The result of the study proved that there is necessity of giving education on BSE in order to increase the awareness and ability of women. Hence it become the responsibility of health professionals to create awareness regarding BSE

The finding of the present study has implication in nursing practice, administration, and community health nursing and mass media.

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8. Conflict of Interest

The authors report no conflicts of interest in this work.

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