Assessment of the Knowledge of Breast Cancer and Breast Self- Examination

Love Shah, Kaushalendra Mani Tripathi* and karnik Patel

Department of Medicine, V.S. Hospital, Smt. NHL Municipal Medical College, Ahmedabad, India

*Corresponding Author: Kaushalendra Mani Tripathi, Department of Medicine, V.S. Hospital, Smt. NHL Municipal Medical College, Ahmedabad, India.

Abstract

Self-assessment of breast cancer is an important in the early detection of cancer in young adults and especially those susceptible to the disease, breast cancer if detected early can help in the early treatment and prevention of spread of the tumor, its detection varies among different socio-economic classes and backgrounds, it is necessary to make it essential to understand the cancer literacy in women, we conducted a study to help us understand the extent of this knowledge and inferred how to further implement measures to prevent breast cancer.

Keywords: Self-Assessment; Breast Cancer; Young Adults; Community Medicine

Introduction

Breast Cancer is the most common cancer (31%) in women amongst the age group 25 - 75. Incidence is 110 per 10,000 Women. 86 percent of women with breast cancer are alive after 5 years of diagnosis being the third most common cause of death in woman.

As per recent statistic of the international agency for research on cancer (IARC) breast is the second most common site for neoplasm after lung accounting for about 22.4% of cancers in females making it most common cancer in women.

Breast self-examination is the other most commonly recommendation tool for breast cancer screening other than mammogram. It is simple non-invasive, requires little time has no medical cost.

In our project we have selected school teachers because breast cancer is most common in this age group and also by educating teachers they can spread awareness amongst their family members and students.

Research Question

What is the knowledge about breast cancer and breast self-examination among 200 female school teachers and 8 purposively selected private and municipal schools of Ahmedabad city and whether imparting health education about it by audio - visual aids will improve knowledge among them by at least 10% after I month from our intervention?

Aim and Objectives

1) To assess the improvement in the knowledge regarding Breast Cancer.
2) To assess the improvement in the knowledge regarding Breast Self-Examination.

Review of Literature

Breast Cancer is a major health problem worldwide. According to study carried out in India, breast cancer is a worldwide medical problem and a main source of death among woman globally [1-3]. In India, it is 2nd most common cancer with an estimated 80,000 yearly cases.

The incidence rate of breast cancer is 22.9 with the mortality rate of 11.9 [4] among Indian women, 1 in 26 women may presently possess the risks of developing breast cancer throughout their lifetime [5].

Breast cancer being visible and treatable at early stages makes it easier to differentiate it from other cancers [6]. [] If the cancer is detected early, the 5-year survival can reach up to 85% with early detection whereas later detection decreases the survival rate to 56% [7]. The rate of survival is low in some countries which are less developed due to late detection with inadequate prognosis and treatment facility.

Breast self-examination (BSE), clinical breast examination (CBE), and mammography, are some of the preventive self-examination techniques that prevent increased mortality and morbidity [7]. CBE and Mammography are done during hospital visits with specialized equipment and expertise as compared to a BSE which is an expensive tool [8]. BSE helps woman familiarize themselves with their appearance and the feel of the breast to help them detect any pathological changes that can take place overtime [9] in the literature, it is stated that 90% of the times breast cancer is first noticed by the person herself [10] many problems regarding breast cancer can be resolved with early breast cancer awareness [11].

BSE is a practice that is seldom done though it varies in different regions, it is quick and cost effective like in England, a study by Philip., et al. [12] reported that only 54% of the study population practiced BSE. In Nigeria, it ranges from 19% to 43.2% [8,13] and 0 to 52% in India [14,15]. Lack of time, lack of self-confidence in their ability to perform the technique correctly, fear of possible discovery of a lump, and embarrassment associated with manipulation of the breasts are the reasons for its decrease in its practice [16,17].

With this in mind, the present study was designed to determine the knowledge, attitude, and practice (KAP).

From a study in Jordan

Breast Cancer (BC) is the most common cancer in women in most parts of the world. In 2002, it was the second most common cancer overall (1.2 million cases), ranking as the fifth cause of death.

In the United States and the world, there was an estimated 192,370 new cases in 2009 which were diagnosed with invasive BC, as well as an estimated 62280 additional cases of in situ BC.

Meanwhile in Europe, BC is by far the most common form of cancer diagnosed in European women today, accounting for 429.900 cases (28.9% of total cases). Unless screening and prevention can reduce the incidence of cancer, the number of new cases is projected to increase from 10 million in 2000 to 15 million in 2020; 9 million in developed countries, whereas in developing countries, the top cancers in women breast, cervical, stomach, lung, and colorectal cancer [8].

In Jordan, BC is the most common cancer with highest incidence among the ten most common cancers affecting Jordanian women. It constitutes 34.8% of all cancers in women (which is 1,626 cases), 70% of BC cases were being diagnosed at the advanced stages of the disease, and only 7% of BC cases are being diagnosed in the early stages. Consequently, this decreases the chances of early detection and treatment and increases mortality rates.

About 87% of the subjects knew that BC is the most prevalent cancer among Jordanian women. Whereas other studies reported less percentages of about (42%) of the sample knew that there was a relationship between BC and heredity. This figure is lower than what had been reported by other authors. About 90% knew that early detection of BC can lead to early management and consequently to better results. This findings is similar [18].

Risk factors for breast cancer

- Gender
- Aging
- Genetic Risk Factors
- Personal History of Breast Cancer
- Infrequent Menstrual Periods
- Being overweight or obese.

Signs and symptoms of breast cancer

- Swelling of all or part of a Breast (even if no distinct lump is felt)
- Skin irritation of dimpling
- Breast or Nipple Pain
- Nipple Retraction (turning inward)
- Redness, Scaliness, or thickening of the nipple or Breast skin
- Nipple Discharge (other than Breast Milk).

Sometimes a breast cancer can spread to lymph nodes under the arm or around the collar bone and cause a lump or swelling there, even before the original tumor in the Breast tissue is large enough to be felt. Swollen lymph nodes should also be reported to your doctor as it could be for a variety of reasons.

The Staging of breast cancer
The American Joint Committee on Cancer (AJCC) TNM system
Primary tumor (T) categories:

- **Tx:** Primary tumor cannot be assessed.
- **T0:** No tumor.
- **Tis:** Carcinoma in situ (dcis, lcis, or paget disease of the nipple with no associated tumor mass).
- **TI:** (Includes tla, tlb, and tlc): Tumor is 2 cm (3/4 of an inch) or less across.
- **T2:** Tumor is more than 2 cm but not more than 5 cm (2 inches) across.
- **T3:** Tumor is >5 cm across.
- **T4:** (Includes t4a, t4b, 14c, and t4d): Tumor of any size growing into the chest wall or skin. This includes inflammatory breast cancer.

Can breast cancer be prevented?

Breast cancer cannot be prevented.

Lowering your risk

- Get regular, intentional physical activity.
- Reduce your lifetime weight gain by limiting your calories and getting regular physical activity.
- Decrease or do not ingest alcohol.

Women who breastfed for several months can develop benefits of reducing their risks.

The use of hormone therapy causes risk of breast cancer.

Finding breast cancer early

Other than lifestyle changes, the most important action a woman can take is to follow the American cancer society's guidelines for early detection. Early detection will not prevent breast cancer, but it can help find it when the likelihood of successful treatment is greatest.

Screening exams, such as mammograms, find cancers before they exhibit symptoms. Breast cancers that are usually found have already spread beyond the breast, in contrast to small and confined breasts that are usually are found during routine self-assessments, the size is another major important factor for a woman with this disease.

Recommendations according to the American cancer society to detect breast cancer are:

- Women aged 40 and older should undergo an annual screening mammogram. For every 3 years, Women in their 20s and 30s must undergo a clinical breast exam (CBE) by a health professional as a part of a regular checkup. After age 40, women should a breast examination annually.
- Breast self-exam (BSE) is an option among women in their 20s. The benefits and limitations of BSE must be informed.
- It is recommended by the Society against MRI screening for women whose risk is less than 15%. There is no Substantial evidence to disregard an annual check-up. MRI screening for women who have a moderately increased risk of breast cancer (a lifetime risk of 15% to 20% according to risk assessment tools that are based mainly on family history) or who may be at increased risk of breast cancer based on certain factors, such as:
- Having a personal history of breast cancer, ductal carcinoma *in situ* (DCIS), lobular carcinoma in Mammograms

Strict guidelines ensure that mammogram equipment is safe and uses the lowest dose of radiation possible. Many people are concerned about the exposure to x-rays, but the level of radiation used in modern mammograms docs not significantly increase the risk for breast cancer

Clinical breast exam

A clinical breast exam (CBE) is an exam of your breasts by a health care professional, such as a doctor, nurse practitioner, nurse, or doctor's assistant. The patient will undress from the waist up for the exam. The health care professional will first try to find any abnormalities in size or shape, or skin of the breasts or nipple. The breasts are palpated with the pads of the fingers.

Special attention will be given to the shape and texture of the breasts, location of any lumps, and whether such lumps are attached to the skin or to deeper tissues. The armpits of the both the arms are examined.

All women should learn the self-examination techniques under the supervision of a doctor or nurse.

Breast awareness and self-exam

Women in their 20s must know the benefits and limitations of BSE, with an idea of how normal breasts are with the feel and look and report any possible pathological changes not necessarily indicating cancer as soon as they see it to any health professional.

A woman can use a schedule or a step-by-step approach (with a BSE) by looking and feeling her breasts for any changes.

A woman can accurately examine her breasts especially when they are not tender or swollen and can even be done with breast implants, the edges of the implants should be identified with the help of the surgeon to know what is being felt by the women, the implants can possibly push out breast tissue make it easier to palpate and examine them. A Health care professional should review the technique periodically. Pregnant or breastfeeding women can also choose to undergo BSE occasionally.

Woman don't necessarily have to undergo BSE or choose not to do it occasionally. Irrespective, they must be aware of the normal look and feel with any pathological changes reported as soon as possible

Procedure for the examination of breasts

The patient should lay down and place their right arm behind the head. This is a procedure done lying down as it evenly spreads evenly over the chest wall and is as thin as possible, making it much easier to feel all the breast tissue.

- The pads of the 3 middle fingers of the left hand are used to feel for changes of the right breast.
- The pads should have overlapping dime-sized circular motion over the breast tissue and feel them.
- A vertical movement maybe an efficient way for covering the entire breast, without missing any area of the tissue
- Repeat the exam on your left breast, with the same technique done on the right breast except using the opposite arm this time.
- The examination is done in front of the mirror with the arms firmly down on the hips, pathological changes are looked for (the pressing down allows the chest wall muscles to contract and get fixed, enhancing any breast changes).
- While sitting or standing, the underarms are assessed with them only being slightly raised, to let the area be easily felt, where as raising the arm straight up makes the area tighten with even more difficult to assess.

After extensive reviews and further studies with advises from committees, the procedure has changed over time, with evidence suggesting different use of pressures, the area of the tissues with the patient lying down.

Methodology and Material
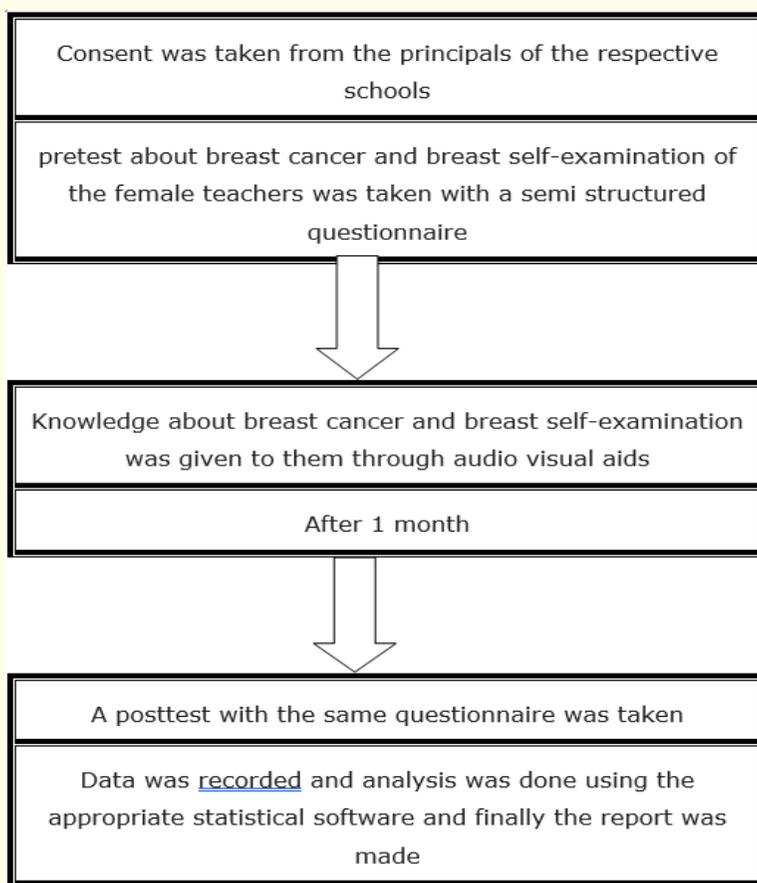
Flowchart

Study Design: Educational interventional study.

Study Area: 8 schools of Ahmedabad city (4 municipal and 4 private schools).

Sample Size: 200.

Sampling Method: Purposive sampling.

Study Subject: Female school teachers.

Inclusion Criteria

1) 20 - 60 Yr aged school teachers.
2) Teachers who were present at time of our visit.

Exclusion Criteria

1) Teachers who had past or present history of breast cancer.
2) Teachers who didn't give consent.

Ethical Consideration: Written consent from the concerned authority.

Time line Chart

Report									
Analysis									
Data Entry									
Data Collection									
Review of Literature									
Proforma									
Permission from Respective Authority									
Weeks	1	2	4	6	8	10	12	14	16

Resources

1.	Persons	4	4	-
2.	Stationeries (papers)	1000	1000	Rs. 800
3.	Laptop Total	2	2	-
				Rs. 800

Result and Discussion
Sociodemographic profile

	Frequency (n = 200)	Percent
Schools		
Municipal	100	50
Private	100	50
Religion		
Hindu	183	91.5
Christian	9	4.5
Other	8	4.0
Age Group		
21 - 30	40	20.0
31 - 40	75	37.5
41 - 50	50	25.0
51 - 60	35	17.5
Education		
Graduate	117	58.5
Post Graduate	83	41.5
Family Type		
Nuclear	9	4.5
3 Generation	91	45.5
Joint	100	50

Description of teachers according to age group (n = 200)
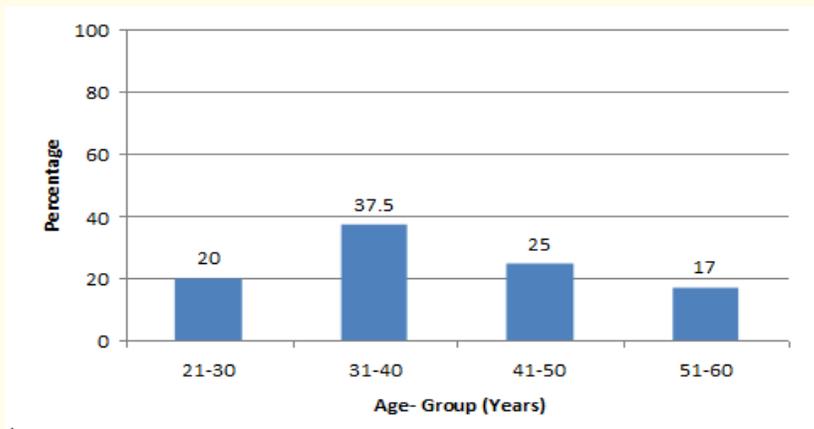
Figure 1

The bar diagram showing that maximum number of school teachers about 37.5% were in the age group 31 - 40 year.

Age group statistics	
Mean	39.65
Std. Deviation	9.580

Correct answer to the question

Questions	Correct Answer	Pre Freq	Post Freq	Pre %	Post %	'P' Value
Most common occurring cancer in 20 - 60 year	Breast Cancer	113	145	56.5	72.5	< 0.001
Most preventable cancer of your age group	Breast Cancer	124	155	62	77.5	< 0.001
Reasons for not increasing no of cases of breast cases	Degree of effective mass screening	86	112.5	43	56.25	< 0.001
Reasons for not detection of enough cases	Not sufficient knowledge about health	97	157	48.5	78.5	> 0.005
	Hesitancy in getting check-ups from doctor	99	108	49.5	54	> 0.005
Most common age group for breast cancer	40 years and above	133	159	66.5	79.5	> 0.005
Breast cancer can be best prevented in	Adolescent girls	47	99	23.5	49.5	< 0.001
Primary test to detect breast cancer	Breast self-examination	144	161	72	80.5	> 0.005
Can breast cancer be stopped for reaching end stage	Yes	146	160	73	80	> 0.005
How can it be done	Breast self-examination	112	163	56	81.5	> 0.005
	Physical examination by a doctor	47	96	23.5	48	< 0.001
Female breast remain small and immature till	Puberty	130	167	65	83.5	> 0.005
Number of lobes in female breast	15-20	14	52	7	26	< 0.001
Pigmented to do breast self-examination	Areola	46	169	23	84.5	< 0.001
Method to do breast self-examination	Palpation of breast	120	107	60	53.5	> 0.005
	Visualization of breast	30	171	15	85.5	> 0.001
	Examination both breast one by one	64	90	32	45	< 0.001
Does breast feeding help in preventing breast cancer	Yes	130	173	65	48.5	< 0.001
Do oc pills help in preventing breast cancer	Yes	28	60	14	30	< 0.001

Answers from questionnaire regarding knowledge
Most common cancer amongst females of 20 - 60 years age group

There is highly significant improvement by our intervention.
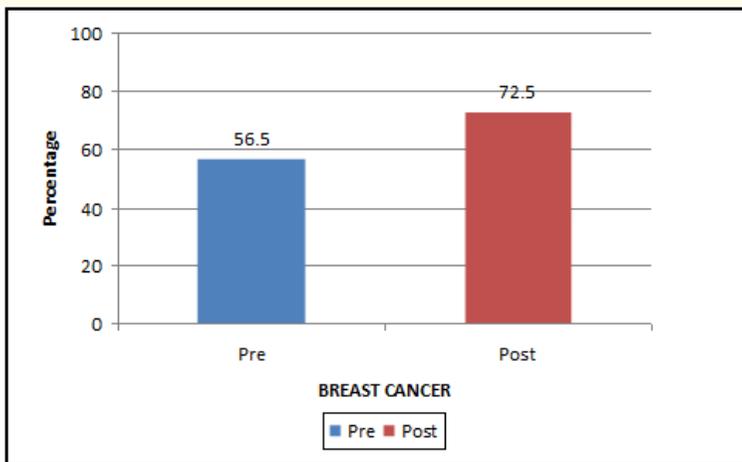
p' value <0.001
Figure 2

After our intervention 72% teachers have given the correct answer.

But still about 28% have given other answers like Cervical Cancer and don't know.

Which cancer is most preventable in your age group

The value of 'p' is < 0.001 and thus there is highly significant improvement by our intervention.
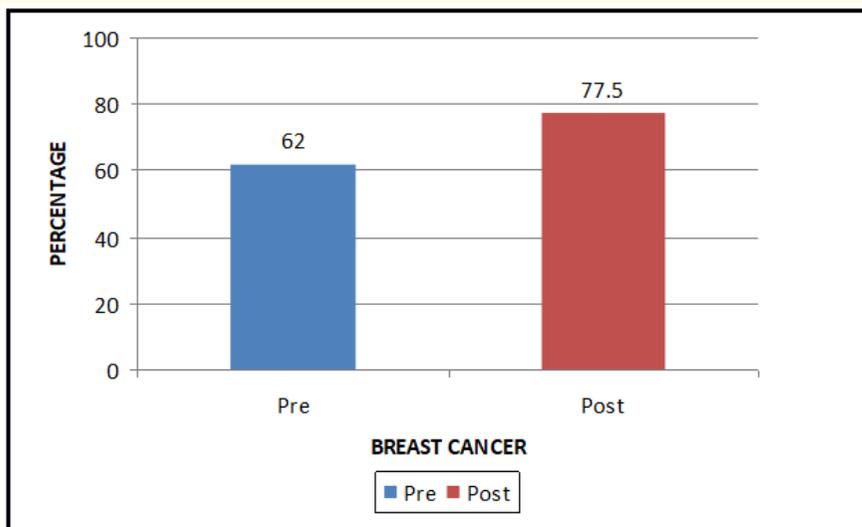
Figure 3

The correct was given by 62% in the pretest which increase to 77.5% answer in the post test. Still 22.5% teachers gave incorrect answers Ovarian Cancer (3%) and don't know.

Reasons for increasing number of cases of breast cancer

The value of 'p' is < 0.001 and thus there is highly significant improvement by our intervention.
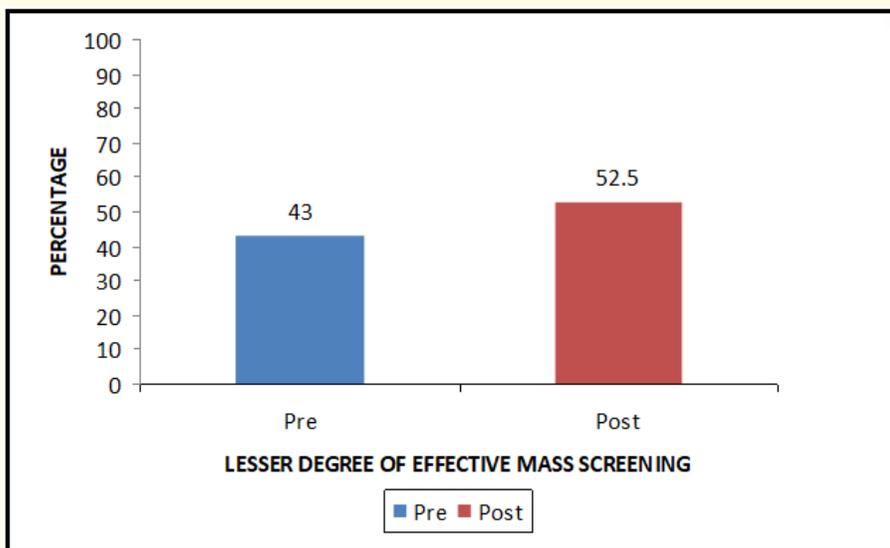
Figure 4

The correct answer was given by 43% in the pretest which increase to in the post test. Still 6.5% have given Economic factor as an Answer and 12% have given sexual behaviour as their answer.

Reason for not detection of breast cancer
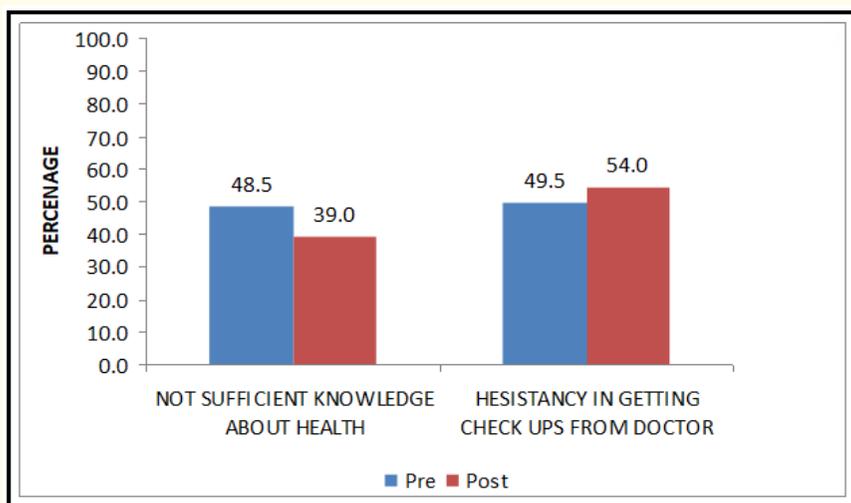
Figure 5

Most common age group for breast cancer

The value of 'p' is > 0.005 and thus there is no significant improvement by our intervention.
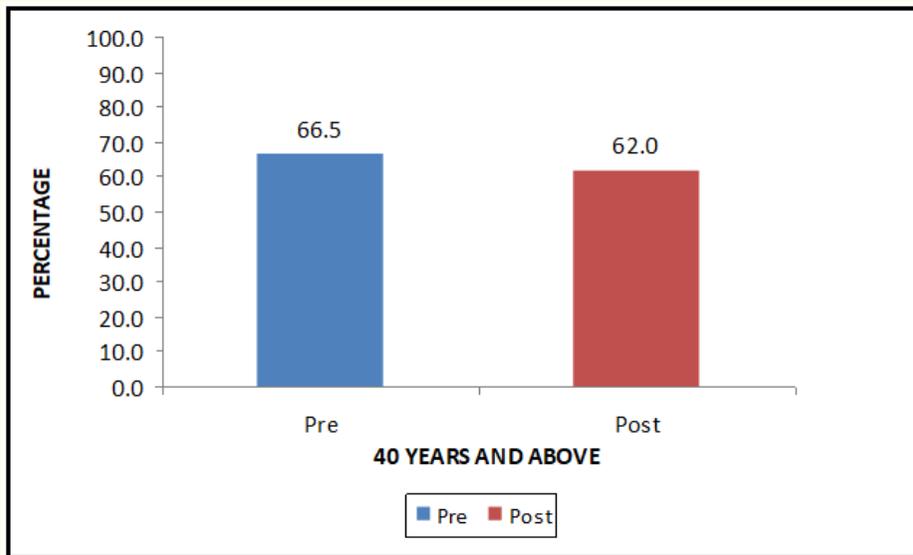

Figure 6

The correct answer was given by 66.5% in the pretest which increase to 62% in the post test. This decrease maybe due to recall bias.

Progress of breast cancer can be prevented

The value of "p' is > 0.005 and thus there is no significant improvement by our intervention. 3.5% teachers have given their answer as exercise and 2.5% teachers have given answer as dieting.
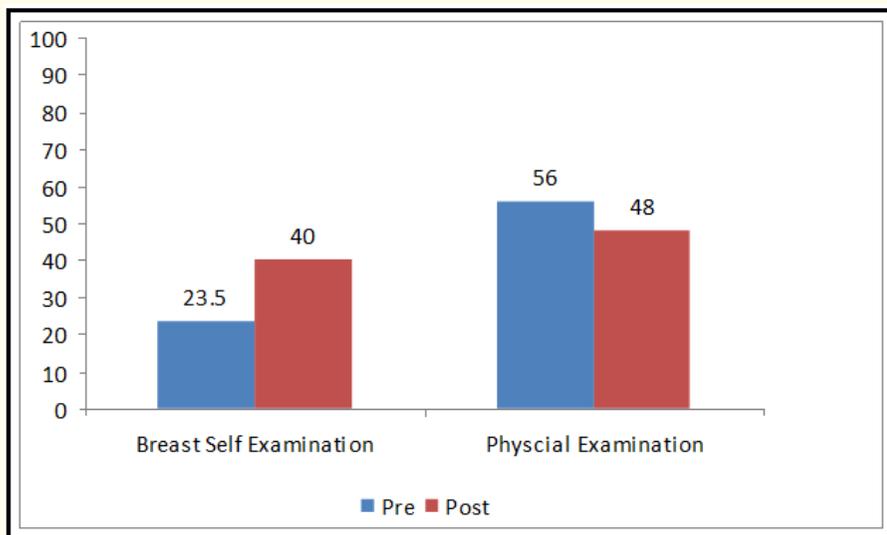
Figure 7

Method of breast self-examination
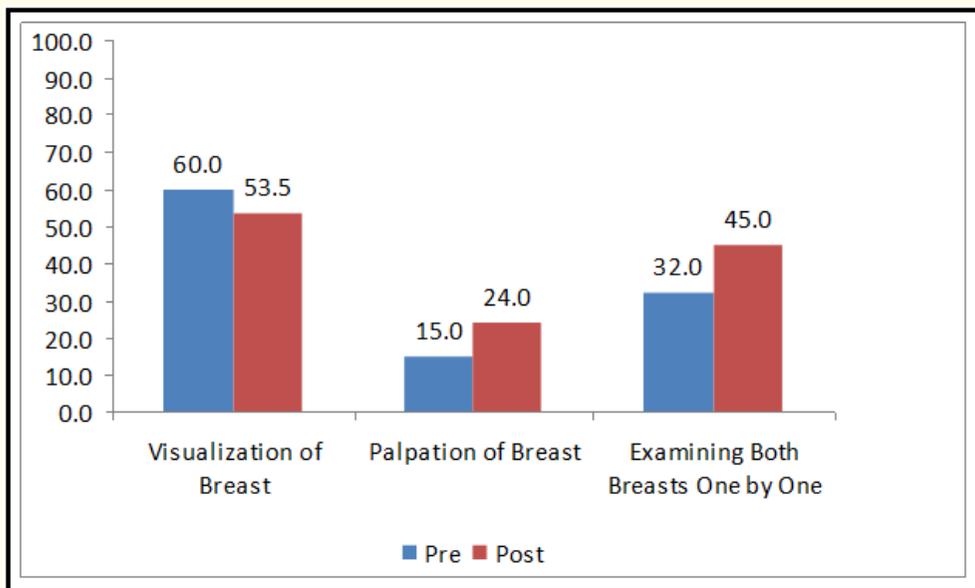
Figure 8

The value of 'p, is > 0.005 and thus there is no significant improvement by our intervention. Here only 1.5% have given all 3 options as correct.

Female breast remain immature till

The value of 'p' is > 0.005 and thus there is no significant improvement by our intervention.
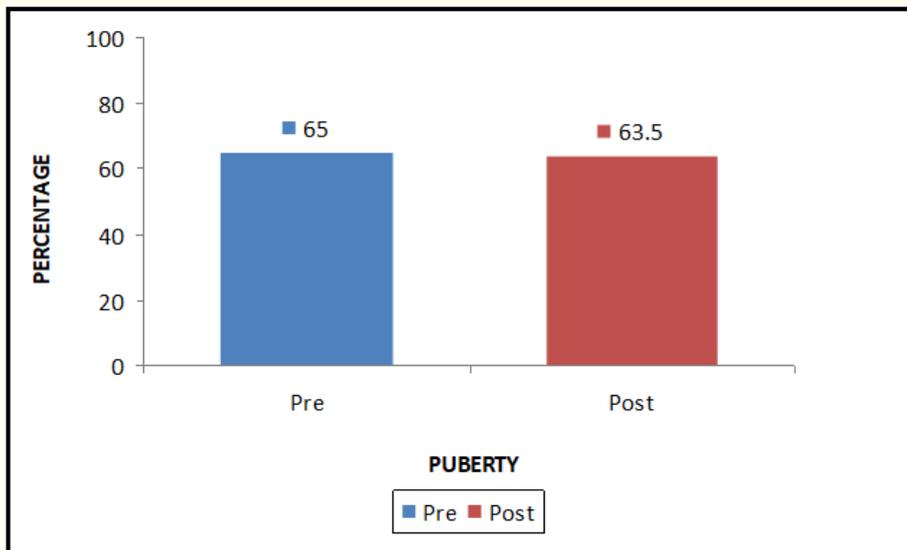

Figure 9

The correct answer was given by 65% in the pretest which decreed to 63.5 in the post test. It may be due to recall bias.

10% teachers have still given the answer pregnancy and about 8.5% still say menopause in the post test.

Pigmented part of the breast
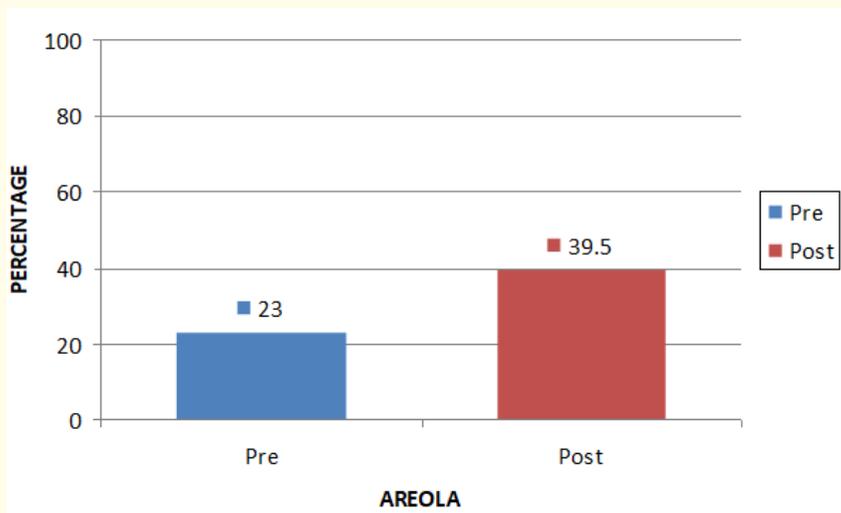
Figure 10

The value of 'p' is < 0.001 and thus there is highly significant improvement by our intervention.

It is seen that correct answer in the pretest was given by 23% teachers and has increased to 39.5% in the post test.

### Number of lobes in each breast
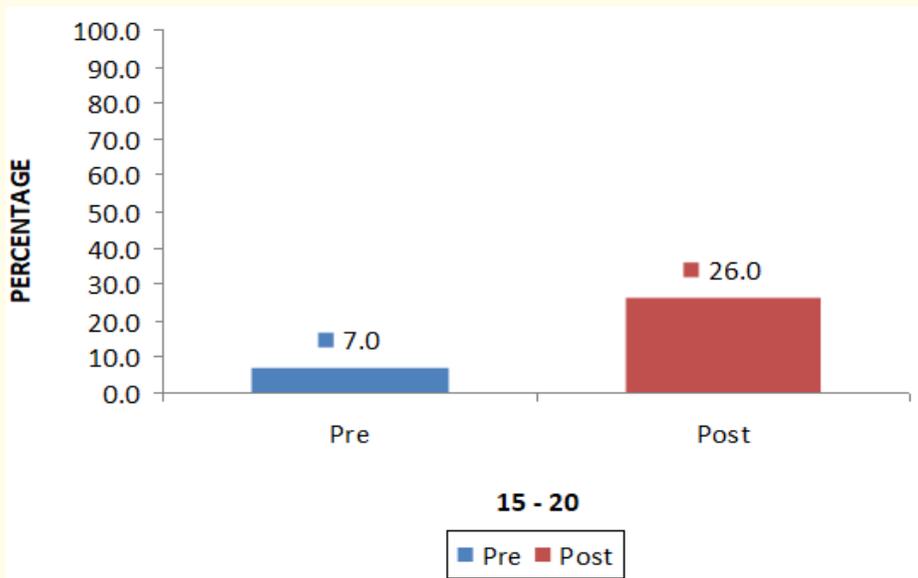
Figure 11

The value of 'p' is < 0.001 and thus there is highly significant improvement by our intervention.

It is seen that correct answer in the pretest was given by 7% and has increased to 26% in the post test. About 50% teachers still said don't know and more intervention needs to be done.

Can breast cancer be prevented
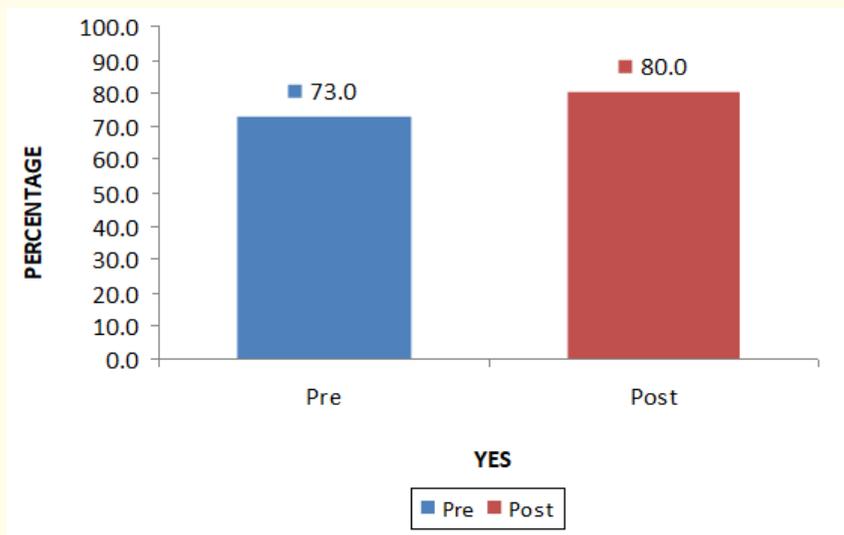
Figure 12

It is seen that knowledge that breast cancer can be prevented from the pretest was 73 and has increased to 80 in the post test and by applying the z test the value of 'p' is < 0.005 and thus there is significant improvement by our intervention.

Primary method to diagnose breast cancer
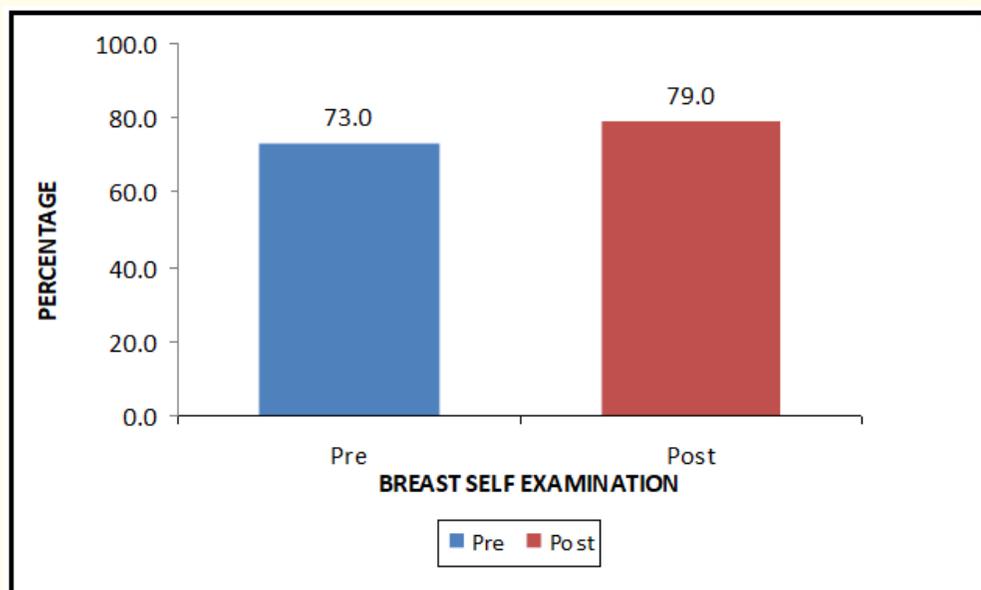
Figure 13

Citation: Kaushalendra Mani Tripathi*., et al.* "Assessment of the Knowledge of Breast Cancer and Breast Self- Examination". *EC Paediatrics* 7.12 (2018): 1212-1229.

The value of 'p' is <0.001 and thus there is highly significant improvement by our intervention.

The correct answer was given by 72% in the pretest and has increased to 79% in the post test.

In which age group can breast cancer be prevented
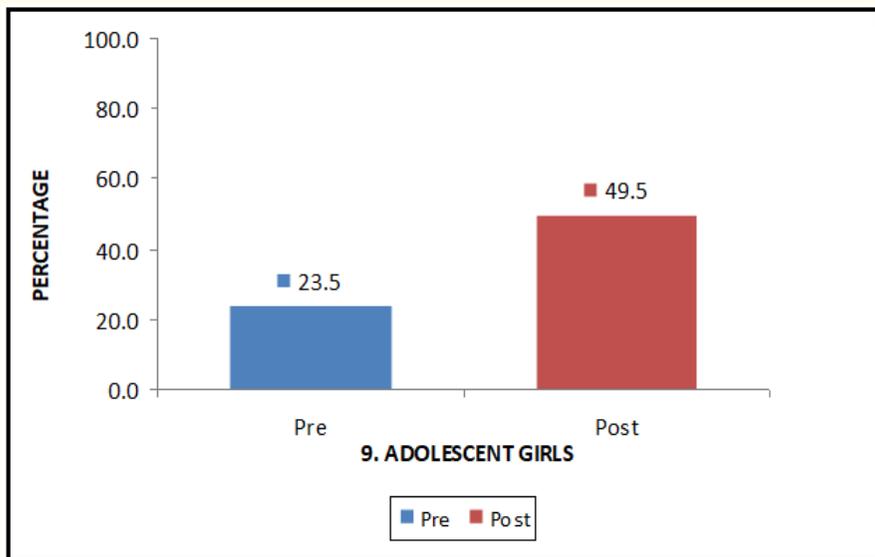

Figure 14

The value of 'p' is < 0.001 and thus there is highly significant improvement by our intervention.

The correct answer was given by 23.5% in the pretest and has increased to 49.5% in the post test.

Still even after our intervention 26% have given 'Post-menopausal women' as the correct answer.

Does breast feeding help in preventing breast cancer
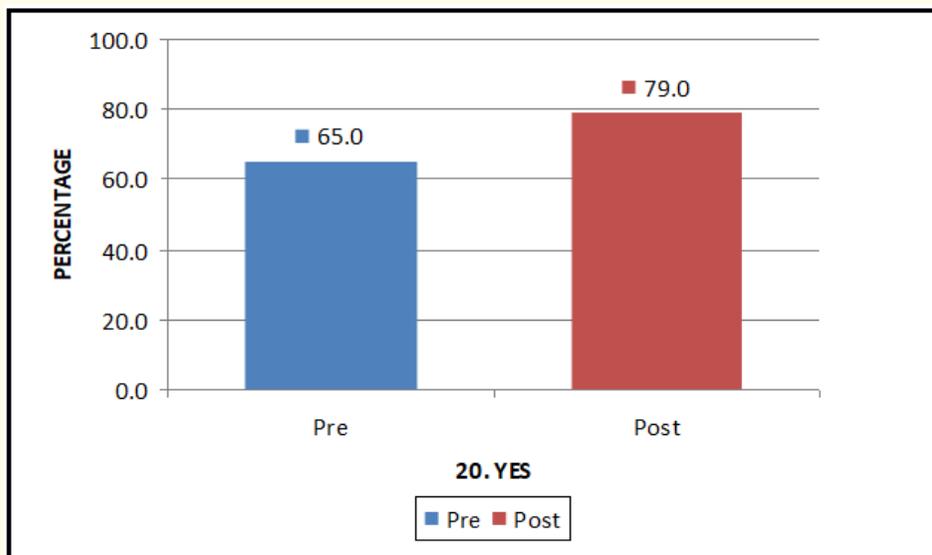
Figure 15

The value of 'p' is < 0.001 and thus there is highly significant improvement by our intervention.

The correct answer in the pretest was given by 65% teachers and has increased to 79% in the post test.

Do oc pills help in preventing breast cancer?
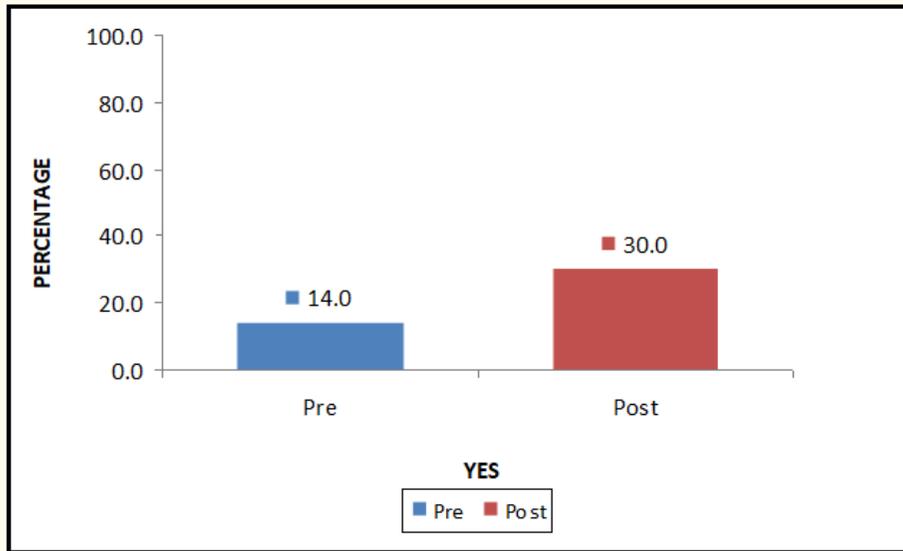

Figure 16

The value of 'p' is < 0.001 and thus there is highly significant improvement by our intervention.

The correct answer in the pretest was given by 14% teachers and has increased to 30% in the post test.

Over all age wise improvement of knowledge regarding Breast Cancer and BSE among study population.
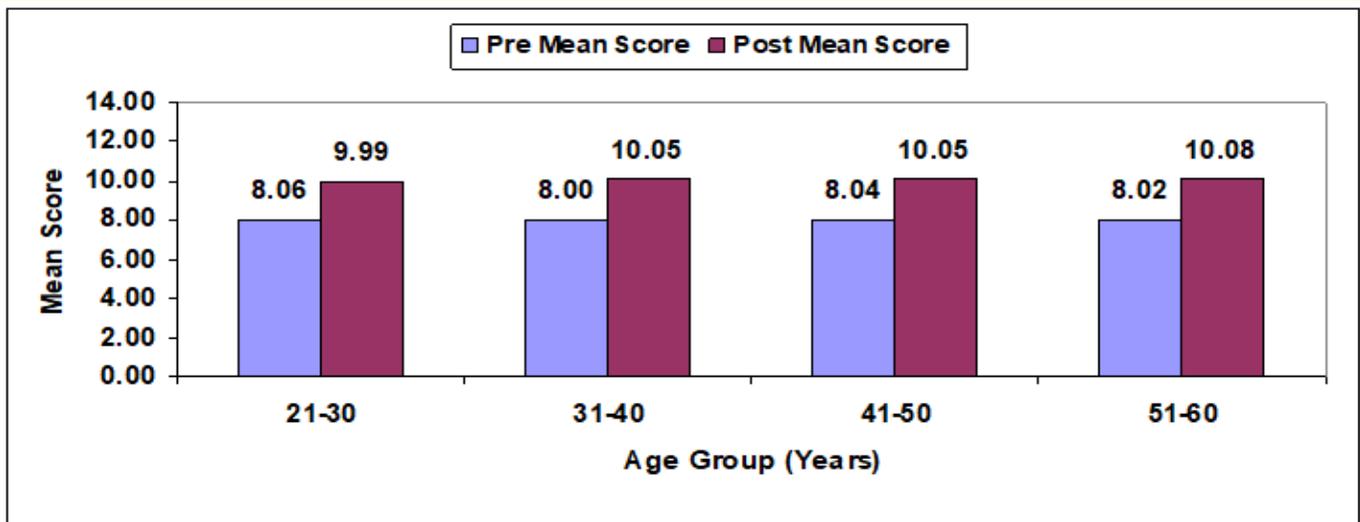
Figure 17

This simple bar diagram showing that there is overall improvement of 25% in their knowledge after our intervention.

Summary

From the 15 questions 1 score was given to each correct answer. In the pre-test total mean score of correct answers among 200 female teachers was 8.01 and the same for the post test was 10.07.

Our objective was to increase the knowledge regarding breast cancer and BSE by 10%.

But here we found an improvement in the overall knowledge by 25.71% due to our intervention after pre-test, which is highly significant ('p' value < 0.00001) by applying 't' test.

We had taken 4 private and 4 municipal schools we found their respective % increase in knowledge as under.

Private school: There were 100 female teachers. In the Pre Test out of 15 Mean of correct answers was 7.1 and in the Post Test out of 15 Mean of correct answers was 10.15. Knowledge increase in %-43%.

Municipal School: There were 100 female teachers. In the Pre Test out of 15 Mean of correct answers was 8.92 and in the Post Test out of 15 Mean of correct answers was 9.99. Knowledge increase is %-11.99%.

Conclusion

- We had a target of 10% increase in knowledge after intervention but we got 25% increase in the knowledge.
- Also from the result we conclude that improvement in knowledge was more in Private schools as compared to Municipal Schools.
- So still more surveys and interventions need to be done in Municipal schools.

Recommendation

Guidance should be given to females of susceptible age group through such interventional programmes it leads to much increase in their knowledge regarding Breast Cancer and BSE.

It is necessary that such interventions and studies should be done on a regular basis so that we can check the knowledge of such population and then improve it using the latest information and newer techniques.

On a regular basis health education campaigns regarding Awareness of Breast Cancer and BSE should be carried out in all institutes having female members and in the community.

Periodic Screening should be done for the early detection of Breast Cancer:
- Practice of BSE should be encouraged as it can lead to early detection of breast cancer.
- Education regarding BSE should be spread in the community so that the incidence and mortality rate due to breast cancer decreases in a long run.
- Various educational programmes should be held that emphasize susceptibility of breast cancer, the benefits to performing BSE, increasing confidence in performing BSE and the barriers to performing BSe (embarrassment, fear, lack of time or privacy).
- Public health programmes which orient woman to breast self-assessment for any pathological changes should publicize through mass media, seminars, conferences, workshops, at the grass root level and health education at health facilities.
- Regular BSE is a cost-effective method of making an early recognition of breast cancer.

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