

## Original Research Article

# Awareness of breast cancer and breast self-examination among nursing students

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## ABSTRACT

**Background:** The purpose of the study was to study awareness and knowledge amongst girls about breast self-examination and breast cancer.

**Methods:** An educational interventional study was carried out among 150 students of V. S. Hospital, School of Nursing. Students were educated about prevalence and severity of breast cancer as well as early detection techniques in an interactive lecture. Pre- and post-tests were administered before and after session. Data was analysed by using Epi Info 3.5.3.

**Results:** It was found that 91% subjects were aware of the term of breast self-examination (BSE). Post intervention, awareness increased by 100%. Half of the subjects believed that practice of breast self-examination should begin at the age of 20 years, post intervention, awareness increased in 93%. Approximately one fourth of the students were aware of the ideal frequency of performing BSE, after the intervention, awareness level increased to 83%. Only 27% of subjects were aware of technique of BSE. Post the intervention, it was found that 87% became aware about the correct technique. There was improvement of 49% in knowledge about indicators of breast cancer.

**Conclusions:** There was increase in awareness among girls about breast self-examination and breast cancer after intervention.

**Keywords:** Breast cancer, Breast self-examination, Nursing

## INTRODUCTION

Breast cancer is a malignant tumour that predominantly affects women but can also affect men. The cancer originates from the cells of the breast tissue and can invade locally or metastasise to other body parts.<sup>1</sup> It is the second leading cause of cancer worldwide among women and cases are on the rise in India. According to a study among Indian women, breast cancer incidence when standardised to age is 22.9 and mortality is 11.19.<sup>2</sup>

The methods of combating breast cancer by early detection are breast self-examination, clinical breast

examination, and mammography. These prevention techniques are the most effective tools against breast cancer.<sup>3</sup>

Unfortunately, many methods are inaccessible to women in developing countries like India, often due to lack of awareness or lack of resources.<sup>4</sup> Breast self-examination (BSE) is a low-cost procedure that can be frequently repeated without harm to the patient. It is a self-performed screening measure that is recommended to increase overall breast health awareness as well as for detection of breast lumps. It is free, painless and easy to practice. More than 60% women with breast cancer in

India are diagnosed at advanced stage, which may be due to limited use of BSE, despite it being identified as an effective method for early detection of breast cancer. Late stage diagnosis drastically affects the treatment options and survival rates of patients.<sup>5</sup>

## METHODS

### *Selection of subjects*

An educational interventional study of 150 girls of VS General hospital, School of nursing, Gujarat, India. The study was carried out from April, 2016 to July, 2016.

### *Inclusion criteria*

Nursing students  $\geq$  18 years of age

### *Exclusion criteria*

Nursing students <18 years of age. Students who did not give consent for study.

The permission to carry out this study was taken from the Dean of NHLMMC and Dean of the V. S. General hospital, School of nursing. Ethical clearance from the Institutional Review Board was taken.

### *Methodology*

Informed consent of the volunteers was obtained before commencement of the session.

150 nursing students were educated about the prevalence and severity of breast cancer as well as early detection techniques in a lecture supplemented by posters and audio visual aids such as emphasis was put on, prevalence of breast cancer, importance of early detection, methods of early detection and self-assessment techniques.

After the lecture, the students were divided into groups so that questions could be answered in greater depth and proper understanding could be ensured.

Pre- and post-tests were administered before and after the session to quantitate the increase in the level of knowledge of breast cancer and breast self-examination.

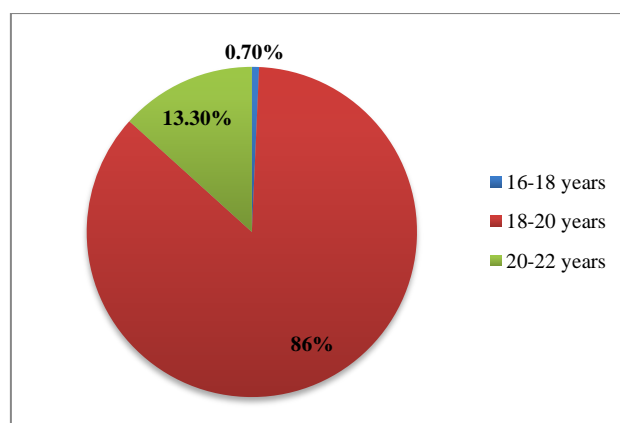
### *Statistical tests and software*

Analysis of data was performed by using Epi Info 3.5.3. Results of categorical responses were presented in terms of frequencies and percentages.

## RESULTS

### *Age distribution*

The age distribution showed that 86% of the study population belonged to the age group of 18-20 years.



**Figure 1: Age distribution of the study population.**

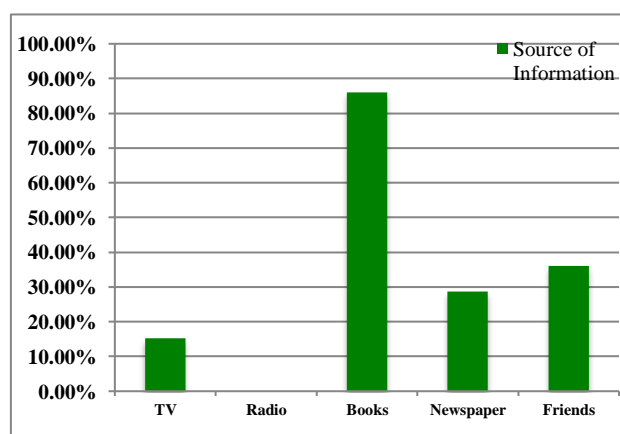
### *Breast self-examination awareness*

#### *Existing knowledge about breast self-examination*

It was found that 13 out of 150 students had not heard of the practice of breast self-examination. However, an improvement was observed after the seminar as 100% of the students were now aware of BSE.

#### *Source of information*

The survey revealed that the most common source of information was books, that is, 86%. This was followed by the factor of friends, and newspapers, which constituted 36% and 28.7% respectively.



**Figure 2: Bar diagram showing the various sources of information for breast self-examination.**

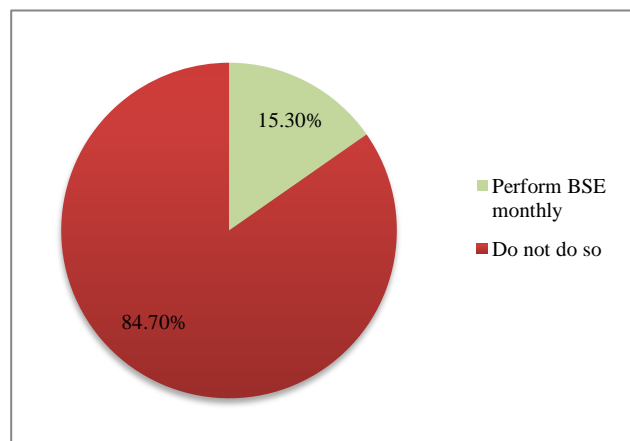
Only 15.3% of the students performed BSE monthly, as per the survey.

Moreover, a mere 20% believed that females only should perform BSE. Post the seminar, 89.3% were now aware.

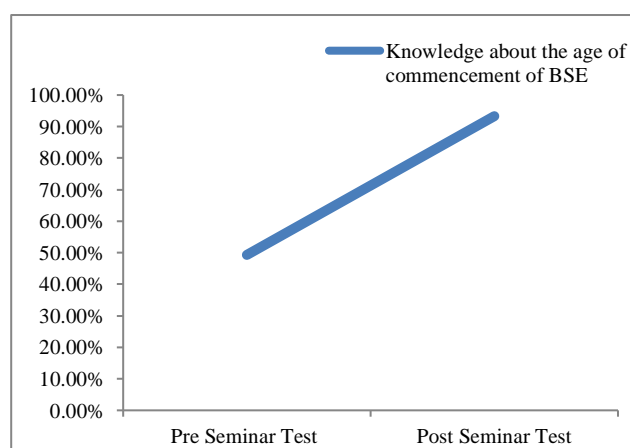
Among 150 female nursing students, less than half, that is, 49.3%, believed that the imperative practice of breast self-examination should begin at the age of 20 years as

that is the age at which the risk to contract the disease increases.

However, the intervention brought the right notion to light as 93.3% of the females came to believe that the right age to commence this healthy practice is 20 years.



**Figure 3: Pie chart showing the proportion of females performing BSE on a monthly basis.**

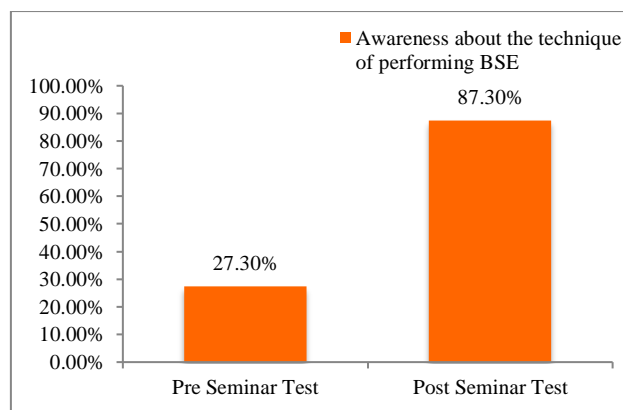


**Figure 4: Line diagram showing the increase in knowledge about the age of commencement of BSE.**

Furthermore, the appropriate time to perform BSE, which is 5-7 days after menstruation, was unknown to a whopping 70% of the sample population. Post the seminar, 88% of the students believed in the accurate fact.

A mere one fourth; 26% of the students were aware of the ideal frequency of performing BSE, that is, once a month and after the intervention, the awareness level increased to 83.3%

On assessing the knowledge about the technique of BSE, it was found that 72.7% of the sample did not know about the position of hand required. Post the intervention, it was shown that 87.3% now knew about the correct technique of performing BSE.



**Figure 5: Pie chart showing the increase in awareness about the correct technique of performing BSE**

It was observed that about 58% of the students were aware about the areas that should receive special attention during BSE, namely the outer edge of breast, underarm, and the nipple. These numbers were further improved to 68.23%.

On being asked about the advantages of performing the examination by lying flat, only 15.3% were able to give the correct answer, that is, it makes the breast flat and makes it easy to assess. After the seminar, this proportion rose to 87.3%.

Another question was put forward to the students about the advantage of clasping hands behind forehead and pressing them forward, and about 28% of the students answered correctly, whereas after the seminar, 62.85% of the students did so.

78% of the students were unaware of the fact that BSE should be carried out every month after menopause on a fixed date. However, after the lecture, 87.3% were now correctly opinionated.

**Table 1: Pre-test versus post-test knowledge of BSE.**

Question	Pre test (%)	Post test (%)
Heard about BSE	91.3	100
Correct age of onset	49.3	93.3
Correct time to perform	30	88
Correct frequency of BSE	26	83.3
Correct position of hand	27.3	87.3
Correct Areas that should receive special attention	58	68.23
Advantage of lying flat	15.3	87.3
Advantage of clasping hands in front of forehead	28	62.85
Correct frequency of performing BSE after menopause	22	87.3
Average	37.05	82.56

Average increase in knowledge about BSE was 45.51%.

### Breast cancer awareness

It was observed that only 0.7% of the students belonging to the sample, had a history of breast cancer in the family.

When asked about the various signs that could be responsible for breast cancer, following observations were made:

**Table 2: Proportion of people considering the indicators relevant in the detection of breast cancer.**

Indicator	Pre test (%)	Post test (%)
Change in the position of your nipple	39.3	86.7
Pulling in of your nipple	24.7	86.7
Puckering or dimpling of your breast skin	35.3	86.7
Discharge or bleeding from your nipple	56	86.5
Lump or thickening in your breast	42	86.6
Nipple rash	35.3	86.7
Redness of your breast skin	38.7	86.7
Lump or thickening under your armpit	44.7	86.7
Changes in the size of your breast or nipple	36	86.7
Changes in the shape of your breast or nipple	27.3	86.7
Average	37.93	86.67

**Table 3: Proportion of people considering these factors to be risk factors for breast cancer.**

Factor	Pre test (%)	Post test (%)
Having a past history of breast cancer	49.3	86
Using HRT (hormone replacement therapy)	54	76.7
Drinking more than 1 unit of alcohol a day	19.3	74
Being overweight (BMI over 25)	29.3	61.3
Having a close relative with breast cancer	33.3	52.7
Having children later on in life or not at all	15.3	69.3
Starting your periods at an early age	18.7	51.3
Having a late menopause	34.7	69.3
Doing less than 30 minutes of moderate physical activity 5 times a week	11.3	66
Average	29.5	67.4

It is observed that there is a significant improvement of 48.74% in the knowledge about the indicators of breast cancer among the sample population.

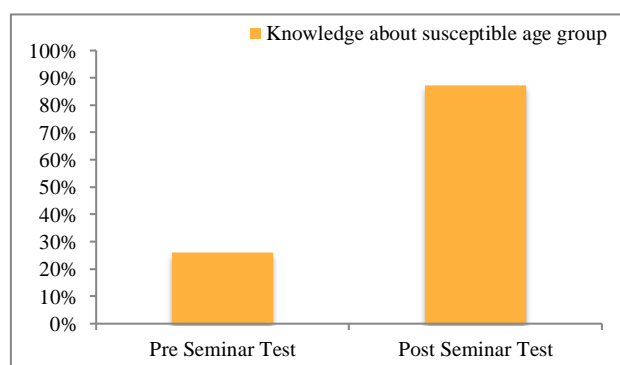
When asked about the risk factors of breast cancer, the following answers were obtained as mentioned in Table 3.

**Table 4: Difference between the knowledge about breast cancer before and after the seminar.**

	Pre test (%)	Post test (%)	Difference (%)
Knowledge about indicators of breast cancer	37.93	86.67	48.74
Knowledge about risk factors of breast cancer	29.5	67.4	37.9
Knowledge about susceptible age group	26	87.3	61.3
Knowledge about difference in prognosis if detected early	83.3	96.7	13.4
Average	44.18	84.52	40.34

It is observed that there is an improvement in the standard of knowledge by 37.9% about the risk factors of breast cancer as a result of the seminar.

A small proportion of 26% was found to know that the most common age group susceptible to breast cancer is that of women of greater than 40 years of age. A rise in the proportion was seen from 26% to 87.3% after the seminar.



**Figure 6: Bar diagram showing the improvement in knowledge about the susceptible age group to breast cancer.**

It was found that after the seminar, there was a rise from 83.3% to 96.7% of students who believed that cancer can be completely cured if detected early.

Therefore, the seminar brought about an increase in knowledge about breast cancer of 40.34% above the

existing knowledge and 97.3% of the females now intend to practice breast self-examination regularly.

## DISCUSSION

Breast cancer is responsible for 19-34% of all the cancer incidences of women in India. The lack of awareness of breast cancer and its screening initiatives in India has resulted in late stage diagnosis and high mortality rates.<sup>6</sup> Early detection and prompt treatment offer the greatest chance of long-term survival and breast self-examination (BSE) seems to be an important viable substitute for early detection of cancer.

This study provided important data about the knowledge of risk factors and symptoms of breast cancer and awareness about breast self-examination among nursing students.

A study conducted in India by Shalini about the awareness and impact of education on the breast self-examination among college going girls, showed that (52%) of them were in the age group of 18-19 years and 72% of them had average knowledge on BSE in the pretest score. Out of 40 participants only one student was performing BSE occasionally.<sup>7</sup> In present study, a majority i.e. 86% belonged to 18-20 years of age and out of 150 participants, 15.3% of them were performing BSE. After our session, a good majority i.e. 97.3% of the students intended to perform BSE and even educate their friends and family members about it.

In a similar study done among nurses, initial scores of knowledge and practice skills related to clinical breast examination were low: Mean knowledge scores of 18 out of 25 (72%) and mean practice scores of 12.5 out of 30 (41.6%). Significant improvement was observed following the abbreviated training intervention in both knowledge and practice skills. Knowledge scores of 22 out of 25 (88%,  $p \leq 0.001$ ) and practice scores of 26 out of 30 (86.6%,  $p = 0.003$ ). Trained nurses were able to improve their knowledge of breast cancer from fair to good knowledge.<sup>8</sup>

Present study showed 45.51% increase in BSE knowledge after the seminar and 40.3% increase in the knowledge about breast cancer. In contrast to other studies, present study shows drastic improvement in the knowledge about breast cancer and BSE after the seminar.

## CONCLUSION

This study shows that knowledge about breast self-examination (BSE) and breast cancer, specifically about the risk factors and indicators of breast cancer is inadequate among the nursing students in Gujarat. It is important to increase awareness of breast cancer and BSE at an early age in women. This knowledge would result in early detection of cancer and prevent late stage detection when minimum treatment options are available. An

educational intervention, promoting knowledge among nurses and healthcare workers can go a long way, as they can further pass on the information. This study shows the importance of conducting educational training programs on breast cancer and BSE. More programs should be performed reaching all age groups, regions and societies.

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