# Knowledge and Attitude towards Breast Cancer and Breast Self-Examination among Nursing Students of a Tertiary Care Centre in North Kerala

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**Abstract:**

**Introduction:** Breast cancer is one of the most common types of cancer affecting women worldwide. Early detection of breast cancer is crucial for successful treatment outcomes and improved survival rates. Breast self-examination is a technique that enables women to identify any changes promptly.

**Aims and Objectives:** The study aimed to assess the knowledge and attitude towards breast cancer and breast self-examination among nursing students and to find association between knowledge scoring and socio-demographic variables.

**Materials and Methods:** The survey was conducted among 125 BSc nursing students from 1st year to 4th year in a tertiary care centre. A pretested semi structured questionnaire including socio-demographic details and questions on knowledge and attitude towards breast cancer and breast self-examination were prepared. The Google form was prepared and circulated among the students in the class and they were asked to fill the form individually.

**Results:** Out of the 125 study subjects, 94 (75.2%) students were females and 31 (24.8%) were males. All the students, i.e. 125(100%) students had heard about breast cancer and breast self-examination. Half of the female students, 51(54.5%) have never done Breast self-examination, while 43(45.5%) female students have practiced BSE.

**Conclusion:** Majority of the students 104 (83.2%) had good knowledge about breast cancer and breast self-examination and only 21 (16.8%) had poor knowledge. There was association between age of the study subjects and knowledge scoring which was statistically significant by chi- square test.

**Keywords:** Breast cancer, Breast Self-Examination, Risk factors.

## Introduction

Breast cancer is the commonest malignancy among women globally. It has now surpassed lung cancer as the leading cause of global cancer incidence in 2020, with an estimated 2.3 million new cases, representing 11.7% of all cancer cases. [1] Epidemiological studies have shown that the global burden of is expected to cross almost 2 million by the year 2030. [2] According to the World Cancer Report 2020, the most efficient intervention for breast cancer control is early detection and rapid treatment.[3] The estimated number of incident cases in India in 2016 was 118000 (95% uncertainty interval, 107000 to 130000), 98.1% of which were females, and the prevalent cases were 526000 (474000 to 574000). [4]As per the Globocan data 2020, in India, breast cancer accounted for 13.5%

(178361) of all cancer cases and 10.6% (90408) of all deaths with a cumulative risk of 2.81. [5]

The incidence of breast cancer is on the rise globally, and the Indian state of Kerala is no exception. Kerala has a vibrant and exciting history of social and political struggles centered on the female breast, as is evidenced by the system of breast tax applicable to lower caste women and the breast cloth revolt. Despite this long history of public attention, the diseased female breast remains an area of silence. In Western countries, the Breast Cancer Movement has played a significant role in bringing awareness on breast cancer. Unlike in the Western world and certain other parts of India, Kerala has not seen a

Breast Cancer Movement, and there are no public spaces available for discussion of breast cancer. [6]

Breast self-examination (BSE) is a simple, quick, and cost free procedure. But the practice of BSE is low and varies in different countries. Several reasons like 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 breast have been cited as reasons for not practicing BSE. [7,8] Nursing students play an important role in educating people in both hospital & community settings. They should have thorough and adequate knowledge regarding BSE to extend the knowledge of women and help them to practice BSE themselves. Thus the present study was embarked upon to assess the knowledge among Nursing Students about Breast Cancer and BSE and their attitude towards the same.

### Aims and Objectives:

1. To assess the knowledge and attitude towards breast cancer and breast self-examination among nursing students in a tertiary care teaching institution in North Kerala

2. To describe the socio-demographic profile of the study subjects.

3. To find out the association between socio-demographic profile and the level of knowledge regarding Breast Cancer and Breast Self-Examination (BSE) among study subjects.

### Material and Methods:

**Study Design:** Cross sectional study

**Study Setting:** Malabar Medical College Hospital and Research Centre, Ulliyeri, Calicut, Kerala.

**Study Period:** October 2023

**Study Population:** All B.Sc. Nursing students studying from first to fourth year in the college.

**Sampling Method:** Convenient sampling.

**Sample Size:**

The sample size was determined using the following formula, $n=(z\alpha^2\ pq)/d^2$, where, $z\alpha$ = 1.96 (z value for 95% level of significance), prevalence p = 85% ,based on the study by Madhukumar S etal [9] , q= 15% (100-p) d=7%, the sample size calculated is 104.

Taking into consideration 10 % non-response rate, minimum sample size came out to be 114. The maximum sample size we achieved for our study was 125.

### Exclusion Criteria:

Those who were not willing to participate in the study and those who were absent on the day of data collection.

### Study Tool:

A pre-tested semi structured questionnaire was made which consisted questions on socio-demographic details, questions related to knowledge on risk factors and warning signs of breast cancer, knowledge regarding breast self-examination and attitude towards the same.

### Method of Data Collection:

A google form was prepared including questions from the questionnaires and was circulated among the study population through online platform in the class. After taking informed consent, the study population was asked to complete the questionnaire on the spot. Care was taken to ensure privacy and confidentiality of the information collected. There were total 27 questions related to knowledge on breast cancer and breast self-examination. One mark was allotted for right answer and zero for wrong answer. Those subjects who scored >=50% of the total marks were grouped under good knowledge and those below 50 % of total marks were grouped under poor knowledge.

### Data Analysis:

Data was coded and entered into MS Excel and analyzed using statistical software SPSS version 20. Numerical variables presented as mean ± Standard Deviation. Categorical variables were presented as frequency and percentage. Appropriate statistical tests were used to determine the association between the parameters mentioned above.

### Ethical Consideration:

Permission from Instituitional Ethical Committee was obtained for the study.

### Results:

Table 1: Socio-demographic profile of the study subjects (N=125)

| Variables | Frequency | Percentage |
|---|---|---|
| **Age** | | |
| < 20 | 43 | 34.4% |
| 20 – 25 | 81 | 64.8% |
| > 25 | 1 | 0.8% |
| Mean age: 20.43 +/- 1.72 | | |
| **Gender** | | |
| Male | 31 | 24.8% |
| Female | 94 | 75.2% |
| **Year of study** | | |
| Second year | 75 | 60% |
| Fourth year | 50 | 40% |
| **Marital status** | | |
| Unmarried | 120 | 96% |
| Married | 5 | 4% |
| **Religion** | | |
| Hindu | 67 | 53.6% |
| Christian | 34 | 27.2% |
| Muslim | 24 | 19.2% |
| **Types of family** | | |
| Nuclear family | 102 | 81.6% |
| Joint family | 17 | 13.6% |
| Three generation family | 6 | 4.8% |
| **Socio economic status (BG Prasad scale-2022)** | | |
| Class I | 27 | 21.6% |
| Class II | 30 | 24% |
| Class III | 25 | 20% |
| Class IV | 33 | 26.4% |
| Class V | 10 | 8% |

Table no 1 represents that out of 125 study subjects, most of them 81 (64.8%) were in the age group 20-25 years: 94 (75.2%)were female students and 5 (4%) were married. During the data collection time first year and third year were not available because of their exams on that specific date. According to BG Prasad scale, most of them belonged to Class II and IV socio economic status scale.

Table 2: Distribution among study subjects having positive history of breast cancer in their family members (N=125)

| Breast cancer in family | Frequency | Percentage |
|---|---|---|
| Present | 10 | 8 |
| Absent | 115 | 92 |
| **Total** | **125** | **100** |
| **Relationship** | **Frequency** | **Percentage** |
| Mother | 2 | 20 |
| Sister | 2 | 20 |
| Aunt | 1 | 10 |
| Cousin | 0 | 0 |
| Grand Parent | 4 | 40 |
| Cousin's Mother | 1 | 10 |
| Total | 10 | 100 |

Table no. 2 depicts that out of 125 study subjects , 115 (92%) students did not had family history of breast cancer, while 10 (8%) students had a family history of breast cancer. Those with family history , in 4 study subjects 1st degree relatives were affected.

**Table 3: Distribution in knowledge among study subjects regarding awareness about early detection and chance of survival from breast cancer (N=125)**

| Aware about early detection of breast cancer | Frequency | Percentage |
|---|---|---|
| Yes | 77 | 61.6 |
| No | 13 | 10.4 |
| Don't know | 35 | 28 |
| Total | 125 | 100 |
| **Aware that early detection can improve the chance of survival** | **Frequency** | **Percentage** |
| Yes | 123 | 98.4 |
| No | 1 | 0.8 |
| Don't know | 1 | 0.8 |
| Total | 125 | 100 |

Table no 3 represents that among all the responses, majority of students 77 (61.6%) were aware that breast cancer can be detected at a stage when it can be completely cured.123 (98.4%) students were aware that early detection of breast cancer can improve the chance of survival, while only few were unaware of it.

**Table 4: Distribution among study subjects regarding the source of information regarding breast cancer (N=125)***

| Source of information | Frequency | Percentage |
|---|---|---|
| Internet | 84 | 67.2 |
| Nursing college faculty | 81 | 64.8 |
| Television | 38 | 30.4 |
| Government health staff | 19 | 15.2 |
| Radio | 5 | 4 |
| Family physician | 4 | 3.2 |
| Family member | 3 | 2.4 |
| Books | 1 | 0.8 |

* Multiple response question

Table no 4 reflects that among all the responses, for majority of them, 84 (67.2%) students internet was the main source of information followed by their nursing college faculty 81 (64.8%) students and from the television 38 (30.4%) students.

**Table 5: Awareness regarding warning signs of breast cancer (N=125)***

| Variable | Frequency | Percentage |
|---|---|---|
| Any breast lump | 89 | 71.2 |
| Changes in the breast shape | 64 | 51.2 |
| Skin changes over the breast | 61 | 48.8 |
| Retraction of nipples | 42 | 33.6 |
| Discharge from nipple | 72 | 57.6 |
| Colour change around the areola | 43 | 34.4 |
| Wound in the nipple areola complex | 20 | 16 |
| Swelling in the axilla | 56 | 44.8 |

* Multiple response question

Table no.5 depicts that majority of the students 89 (71.2%) any breast lump is one of warning sign; 72 (57.6%) were aware about discharge from nipple; 61 (48.8%) were aware about skin changes over breast and 56 (44.8%) swelling in axilla as warning signs of breast cancer.

**Table 6: Knowledge regarding breast self-examination among nursing students (N=125)**

| QUESTIONS | CORRECT RESPONSE | INCORRECT RESPONSE |
|---|---|---|
| What do you mean by Breast Self-Examination (BSE)? | 121 (96.8%) | 4 (3.2%) |
| At what age should BSE be started? | 16 (12.8%) | 109 (87.2%) |
| How often BSE should be done? | 43 (34.4%) | 82 (65.6%) |
| What is the best time to do BSE? | 52 (41.6%) | 73 (58.4%) |
| What is the ideal time to do BSE in lactating mother? | 55 (44%) | 70 (56%) |
| BSE is done by inspecting the breast in the mirror, feeling the breast with the hand and feeling the armpit with the hand | 84 (67.2%) | 41 (32.8%) |
| How should palpation be carried out? | 103 (82.4%) | 22 (70.6%) |

| What is the direction of palpation? | 56 (44.8%) | 69 (55.2%) |
|---|---|---|

Table no 6 shows that among all the responses, majority of them, i.e. 121 (96.8%) students were aware about breast self-examination as a screening method, 84 (67.2%) knew how to do BSE and 103 (82.4%) knew correct method of palpation and 56 (44.8%) knew correct direction of palpation.

**Table 7: Knowledge scoring regarding breast cancer and breast self-examination among study subjects (N=125)**

| Variable | Frequency | Percentage |
|---|---|---|
| Good knowledge (Score >=50% of total score) | 104 | 83.2% |
| Poor knowledge (Score < 50% of total score) | 21 | 16.8% |
| Total | 125 | 100 |

**Table 8: Association between knowledge and socio demographic variables (N=125)**

| Variables | Good knowledge frequency | Good knowledge percentage | Poor knowledge frequency | Poor Knowledge percentage | p value |
|---|---|---|---|---|---|
| **Age of study subjects** | | | | | |
| < 20 years of age | 31 | 72.1 | 12 | 27.9 | Chi square test |
| ≥ 20 years of age | 73 | 89 | 9 | 11 | **p= 0.016** |
| **Gender** | | | | | |
| Male | 25 | 80.6 | 6 | 19.4 | Chi square test |
| Female | 79 | 84 | 15 | 16 | p= 0.661 |
| **Year of study** | | | | | |
| 2nd year | 59 | 74.7 | 20 | 25.3 | Fischer's test |
| 4th year | 45 | 97.8 | 1 | 2.2 | **p= 0.000** |
| **Type of family** | | | | | |
| Joint family | 14 | 87.5 | 2 | 12.5 | Fischer's test |
| Nuclear family | 86 | 82.7 | 18 | 17.3 | p= 1.000 |
| Three generation family | 4 | 80 | 1 | 20 | |
| **Religion** | | | | | |
| Hindu | 57 | 85.1 | 10 | 14.9 | Fischer's test |
| Muslim | 27 | 79.4 | 7 | 20.6 | p=0.771 |
| Christian | 20 | 83.3 | 4 | 16.7 | |
| **Marital status** | | | | | |
| Married | 4 | 100 | 0 | 0 | Fischer's test |
| Single | 99 | 82.5 | 21 | 17.5 | p= 1.000 |
| Widowed | 1 | 100 | 0 | 0 | |

Table no 7 and 8 depicts that majority of the students 104 (83.2%) had good knowledge about breast cancer and breast self-examination and only 21 (16.8%) had poor knowledge. There was association between age of the study subjects and knowledge scoring and on chi-square it was statistically significant (p=0.016). On Fischers exact test there was association between year of study and knowledge scoring which was also statistically significant p=0.00.

**Table 9: Attitude among female study subjects showing reasons for performing breast self-examination. (n = 43)\***

| Reasons for performing breast self examinaton | Frequency | Percentage (%) |
|---|---|---|
| I might have breast cancer in the future. | 9 | 18.4 |
| To examine my breast regularly as part of screening | 37 | 75.5 |
| Doctor's advice | 4 | 8.2 |
| Because of alarming symptoms | 4 | 8.2 |
| Breast cancer in family | 2 | 4.1 |

\* Multiple response question

Table no 9 depicts that, out of total 94 female students, 43 students performed BSE and rest 51 did not perform BSE ever. Majority of the female nursing students, 37 (75.5%) students, considered breast self-examination as a screening method to examine their breast regularly, while few of them, 9 (18.4%) students, practiced breast self-examination due to the risk of having breast cancer in the future and few of them, 4 (8.2%) students, also practiced due to doctor's advice.

**Table 10: Distribution among female study subjects regarding reasons for not performing breast self examination (n = 51) \***

| Reasons for not performing breast self-examination | Frequency | Percentage (%) |
|---|---|---|
| I don't know how to do | 35 | 62.5 |
| I don't think it's important | 1 | 1.8 |
| I don't have any symptoms | 24 | 42.9 |
| I am scared of being diagnosed with breast cancer | 2 | 3.6 |
| I can never have breast cancer | 3 | 5.4 |

*Multiple response question

Table no 10 represents that most of the students, 35 (62.5%) students, had never practiced Breast self-examination before, as they were not aware of how to practice it, while the most of the students 24 (42.9%) students did not practice breast self-examination, as they told they did not have any symptoms.

**Discussion**

This study was conducted among nursing students in a tertiary care teaching institution in north Kerala to study knowledge and attitude towards breast cancer and breast self-examination. According to a study conducted by Kommula AL et.al [10] (96.1%) were aware of breast cancer; 59.2% believed that early detection could help save life; 4.8% of the women had family history of breast cancer and 16.5% were aware of BSE. This is in contrast with our study where all 125 students had heard about of breast cancer, 98.4% believed that early detection could improve chance of survival. Only 4% has family history of breast cancer and 96.8% were aware of BSE. Our findings were similar to study conducted by Sujindra E et al [11] that depicted 86.7% answered that breast cancer can be detected early; 87.5% accepted that early detection can improve the chance of survival; 89.2% have heard of BSE and 87.5% have done BSE before. In our study the knowledge regarding warning signs of breast cancer was overall more than 50% in most of the responses. This is in contrast to the study conducted by Madhukumar S et al [9] in which only 58% had knowledge of warning signs. In a similar study conducted by K Godfrey et al [12] only 61.3% had knowledge about risk factors and signs.

**Conclusion**

In our study majority of the students 104 (83.2%) had good knowledge about breast cancer and breast self-examination and only 21 (16.8%) had poor knowledge. There was statistically significant association between age of the study subjects and knowledge scoring which was by chi- square test. Among the 94 female students, majority of them, 51(54.5%) female students have never done Breast self-examination, while 43(45.5%) female students have practiced BSE on themselves. Majority of them, 121 (96.8%) students were aware about breast self-examination as a screening method, 84 (67.2%)

knew how to do BSE and 103 (82.4%) knew correct method of palpation. Nurses play an important role in educating people in hospital and community and the importance of lessons and methods on Breast Self-examinations to be taught at an earlier stage of medical school cannot be understated. They should be made aware of warning signs, modifiable and non-modifiable risk factors for breast cancer to adopt appropriate practices for prevention, for themselves and distribute their knowledge regarding the same to the public. This will also avoid the detection of breast cancer at a later stage.

**Limitations:** The present study was a cross-sectional study done in only one medical college; hence the obtained findings cannot be generalized to other settings.

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