

A Cross Sectional Study To Assess Knowledge, Attitude and Practice on Breast Self-Examination Among Female Students of Higher Secondary in Selected Schools of Shillong, East Khasi Hills, Meghalaya

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Abstract

According to the Indian Council of Medical Research (ICMR), breast cancer is now the most common cancer among women in India.¹ According to GLOBOCAN 2022, breast cancer accounts for approximately 27-32% of all cancers in Indian women. Despite ranking third globally in incidence (192,020 cases), India leads in mortality with 98,337 deaths in 2022. The incidence and mortality rate among younger females (≤ 29 years) are notably high in India, aggravating concerns for healthcare. The lifetime risks is 1 in 28 women overall in India, which increases to 1 in 22 for urban women compared to 1 in 60 for rural women. Furthermore, projections for 2050 indicate a significant increase in breast cancer incidence and mortality.

Breast Self-Examination (BSE) is a screening method used in an attempt to detect early breast cancer and other breast diseases. The method involves the woman herself looking at and feeling each breast for possible lumps, distortions or swelling. Breast Self-Examination increases breast health awareness. It helps promote early detection of cancer and may improve the survival rates for patients with breast carcinoma.

A cross sectional study was conducted to assess the knowledge, attitude and practice on breast-self-examination among female students of higher secondary in the selected schools of Shillong, East Khasi Hills, Meghalaya. 180 students were selected for the study by convenience method and the data was collected using a structured self-administered questionnaire and a 5 point Likert Scale.

The findings revealed that out of 180 participants, majority of them i.e., 117 (65%) have average knowledge, 34 (18.9%) have good knowledge and 29 (16.1%) have poor knowledge on breast self examination. There is a significant association of knowledge on breast self with class ($p=0.037$) and stream ($p=0.001$). With regards to attitude, out of 180 participants, 160 (88.9%) have favourable attitude and only 20 (11.1%) have unfavourable attitude towards breast self-examination. There is a significant association of attitude with family history of breast diseases ($p=0.046$). In terms of practice, the result showed that out of 180 participants, only 29 (16.1%) of the participants have good practice and 151 (83.9%) of the participants have poor practice. No association was found between practice and selected demographic variables.

The survival rates of breast cancer in India are low because the detection takes place late. The findings suggest the need to improve awareness on breast cancer and related diseases and breast self examination. This may be done through conducting awareness programs in schools or integrating breast self-examination in school curriculum or conducting special camps, especially for adolescent girls to build early knowledge and combat low awareness.

Keywords: Knowledge, attitude, practice, breast cancer, breast self-examination

Introduction

Background of the Study

Breast Self-Examination (BSE) is a screening method used in an attempt to detect early breast cancer. The method involves the woman herself looking at and feeling each breast for possible lumps, distortions or swelling. Breast Self-Examination increases breast health awareness. It helps promote early detection of cancer and

may improve the survival rates for patients with breast carcinoma.

Breast Self Examination (BSE) is a free and relatively simple examination which is a part of the breast cancer detection triad. Breast Self Examination (BSE) is a motor skill that entails coordination of palpation, movement and sensation. Breast Self Examination (BSE) includes inspection and palpation of the breast which can be done in both standing and lying down position.

According to the Indian Council of Medical Research (ICMR), breast cancer is now the most common cancer among women in India.¹ According to GLOBOCAN 2022, breast cancer accounts for approximately 27-32% of all cancers in Indian women. Despite ranking third globally in incidence (192,020 cases), India leads in mortality with 98,337 deaths in 2022. The incidence and mortality rate among younger females (≤ 29 years) are notably high in India, aggravating concerns for healthcare. The lifetime risks is 1 in 28 women overall in India, which increases to 1 in 22 for urban women compared to 1 in 60 for rural women. Furthermore, projections for 2050 indicate a significant increase in breast cancer incidence and mortality.²

In Meghalaya, breast cancer holds the 4th place among cancer cases according to a report of National Cancer Registry Programme, India, 2020. The proportion of women who have undergone screening is only 0.5% for breast cancer (ICMR, Meghalaya).³

BSE is not frequently practiced or has been practice incorrectly for many reasons. Studies show that primary barriers for the poor practicing of BSE were forgetfulness, lack of time, ignorance, fear/anxiety, and low level of education. It is therefore important to determine the level of knowledge regarding BSE, as well as the attitude and practice among women in our community to recognize their acceptance, belief, and the

magnitude of current practice. BSE is considered as the main screening modality which will detect early stage of cancer.

The survival rates of breast cancer in India are low because the detection takes place late. Cancer survival becomes more difficult in higher stages of its growth, and more than 50% of Indian women suffer from stage 3 and 4 of breast cancer. Post cancer survival for women with breast cancer was reported 60% for Indian women, as compared to 80% in the U.S. Women can self-diagnose their condition and know of the presence of lumps or masses that suggest cancerous outgrowths. The very reason for a low breast cancer survival rate of women in India accounts from its lack of awareness and poor early screening and diagnosis rates.⁴

Need of the study

BSE is not frequently practiced or has been practice incorrectly for many reasons. Studies show that primary barriers for the poor practicing of BSE were forgetfulness, lack of time, ignorance, fear/anxiety, and low level of education. It is therefore important to determine the level of knowledge regarding BSE, as well as the attitude and practice among women in our community to recognize their acceptance, belief, and the magnitude of current practice. BSE is considered as the main screening modality which will detect early stage of cancer.

The survival rates of breast cancer in India are low because the detection takes place late. Cancer survival becomes more difficult in higher stages of its growth, and more than 50% of Indian women suffer from stage 3 and 4 of breast cancer. Post cancer survival for women with breast cancer was reported 60% for Indian women, as compared to 80% in the U.S. Women can self-diagnose their condition and know of the presence of lumps or masses that suggest cancerous outgrowths. The very

reason for a low breast cancer survival rate of women in India accounts from its lack of awareness and poor early screening and diagnosis rates.⁴

Operational Definitions

Knowledge: Knowledge is an awareness of facts, a familiarity with individuals and situations, or a practical skill.

Attitude: An attitude refers to a set of emotions, beliefs and behaviors toward a particular object, person, thing or events.

Practice: The act of doing something regularly or repeatedly to improve your skill at doing it.

Breast Self-Examination Breast self examination (BSE) is a screening method used in an attempt to detect early breast cancer. The method involves the women herself looking at the mirror and feeling its breast for possible lumps or swelling.

Higher Secondary Students: A student enrolled in the final two years of secondary education, often referred to as classes 11 and 12.

Objectives of the study

Primary objective

To assess the knowledge, attitude and practice on breast self examination among female students of higher secondary in selected schools of Shillong, East Khasi Hills, Meghalaya.

Secondary objective

To determine the association between knowledge, attitude and practice on BSE with selected demographic variables.

Methodology

Research Approach

In this study, quantitative research approach design was finalized to assess the knowledge, attitude and practice on breast self-examination among female students of

higher secondary in selected schools of Shillong, East Khasi Hills, Meghalaya.

Variables in the study

In this study, the variables are socio demographic variables like age, class, stream, religion, mother's educational qualification, father's educational qualification and family history of breast disease. Outcome variables include knowledge, attitude and practice on breast self examination.

Setting of the study

The present study was conducted in St. Margaret's Higher Secondary School, Laitumkhrah, Shillong, Meghalaya and Khasi-Jaintia Presbyterian Higher Secondary School, Jaiaw, Shillong, Meghalaya.

Ethical consideration

The study was conducted after the review from the board of NEIGRIHMS Scientific Advisory Committee (NSAC) and then permission was obtained from the Institution Ethics Committee (IEC), NEIGRIHMS. Permission was also obtained from the Principals of the selected schools and written consent and assent obtained from the participants and their legally authorized representatives.

Study population

In this study, the population comprises of female higher secondary students of selected schools of Shillong, Meghalaya.

Sampling technique

Convenience Sampling Technique

Sample size

The total sample size after calculation is 136 (approx.).

Criteria for sample selection

Inclusion Criteria:

- Female students between age group 15 – 20 years.
- Female students who are willing to participate.

Exclusion Criteria:

- Female students who are absent. .

Data collection procedure

The final data collection was carried out from 16th of June to 21st of June, 2025 at St. Margaret's Higher Secondary School, Laitumkhrah, Shillong, Meghalaya and Khasi-Jaintia Presbyterian Higher Secondary School, Jaiaw, Shillong, Meghalaya.

Prior to data collection, ethical clearance was taken from Institute Ethical Committee, NEIGRIHMS. The final data collection was carried out from 16th of June to 21st of June, 2025. Permission was obtained from the Principal and Vice Principal of each school to conduct the study and informed consent was taken from the participants. The informed consent stated clearly the problem statement, the purpose and the process of data collection along with the information that confidentiality and anonymity of the results will be maintained. On the day of data collection, a short introduction of the study was provided to the participants and thereafter, the participants were allowed to proceed with the self-administered questionnaire and participants took approximately 15-20 minutes to complete it.

Description of data collection tool

The tool used for our research study to collect the data is self-administered questionnaire. It consists of four sections.

Section I: This section comprises of demographic data of the participants seeking information such as age, class, stream, religion, mother's educational qualification, father's educational qualification and family history of breast disease.

Section II: This section contains 18 questions designed to assess the knowledge of the participants on breast self-examination.

Section III: A 5-point LIKERT scale is used in this section to evaluate the attitude of the participants regarding breast self examination.

Section IV: This section includes 10 questions to evaluate the practice of the participants related to breast self examination.

Interpretation of score

Knowledge score was categorized into three categories:

Category	Range of Score
Good knowledge	>11
Average knowledge	6-11
Poor knowledge	<6

Maximum score is 18.

Attitude score was categorized into two categories:

Category	Range of Score
Favourable attitude	12-35
Unfavourable attitude	36-60

Maximum attitude score is 60.

Minimum attitude score is 12.

Practice score was categorized into two categories:

Category	Range of Score
Good Practice	10-19
Poor Practice	20-30

Maximum score is 30.

Minimum score is 10.

Analysis and Interpretation

Analysis and interpretation of the data was done using both descriptive and inferential statistics based on the objectives of the study.

Section I: Findings related to demographic variables of female students of higher secondary in selected schools of Shillong, East Khasi Hills, Meghalaya:

Table 1: Frequency and percentage distribution of participants according to socio-demographic variables (n=180)

Demographic Variables	Frequency (f)	Percentage (%)
Age [in years]		
15-17	139	77.2%
18-20	41	22.8%
Class		
11	90	50%
12	90	50%
Stream		
Arts	60	33.3%
Commerce	60	33.3%
Science	60	33.3%
Religion		
Christian	150	83.3%
Hindu	16	8.9%
Islam	5	2.8%
NiamTynrai	9	5.0%
Mother's Educational Qualification		
Illiterate	7	3.9%

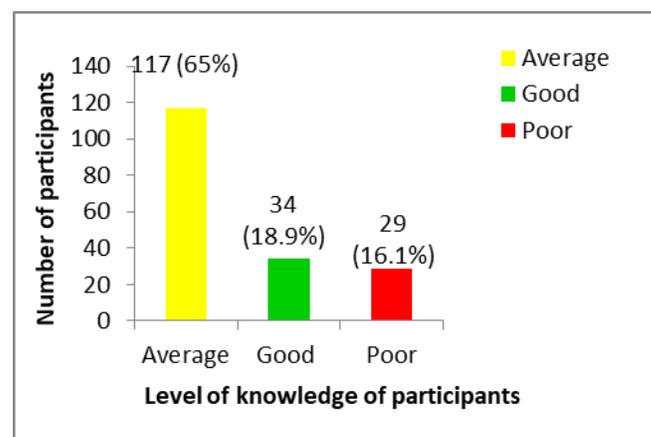
Primary	79	43.9%
Secondary	38	21.1%
Higher Secondary	22	12.2%
Under Graduate	28	15.6%
Post Graduate	6	3.3%
Father's Educational Qualification		
Illiterate	16	8.9%
Primary	52	28.8%
Secondary	39	21.7%
Higher Secondary	34	18.9%
Under Graduate	34	18.9%
Post Graduate	5	2.8%
Family history of breast disease		
Yes	8	4.4%
No	172	95.6%

Table 1 shows that 139 (77.2%) of the participants fall under the age group of 15-17 years and 41 (22.8%) of the participants fall under the age group of 18-20 years. Out of the 180 participants, 90 (50%) belongs to class 11 and 90 (50%) belongs to class 12. The participants are divided into 3 streams, i.e., arts, commerce and science with each streams consisting of 60 (33.3%) participants.

In terms of religion, 150 (83.3%) identify as Christian, 16 (8.9%) identify as Hindu, 5 (2.8%) identify as Islam and 9 (5%) identify as Niam Tynrai. Regarding mother's qualification of the participants, 7 (3.9%) of them are illiterate, 79 (43.9%) have primary education, 38 (21.1%) have secondary, 22 (12.2%) have higher secondary, 28 (15.6%) have undergraduate and 6 (3.3%) have post graduate level of education. As for Father's qualification, 16 (8.9%) are illiterate, 52 (28.9%) have primary education, 39 (21.7%) have secondary, 34 (18.9%) have higher secondary, 34 (19.9%) have undergraduate and 5 (2.8%) have postgraduate level of education respectively. Out of all the 180 participants, only 8 (4.4%) have history of breast disease in their family.

Section II: Findings related to the level of knowledge, attitude, and practice on breast self-examination among female students of higher secondary in selected schools of Shillong, East Khasi Hills, Meghalaya

Figure 1: Frequency and percentage distribution of knowledge score obtained by the participants (n=180)



The data presented in the above figure (Fig: 1) shows that out of 180 participants, majority of them i.e., 117 (65%) have average knowledge, 34 (18.9%) have good knowledge and 29 (16.1%) have poor knowledge on breast self examination.

Figure 2: Bar diagram showing percentage distribution of knowledge of participants on breast self-examination based on domains.(n=180)

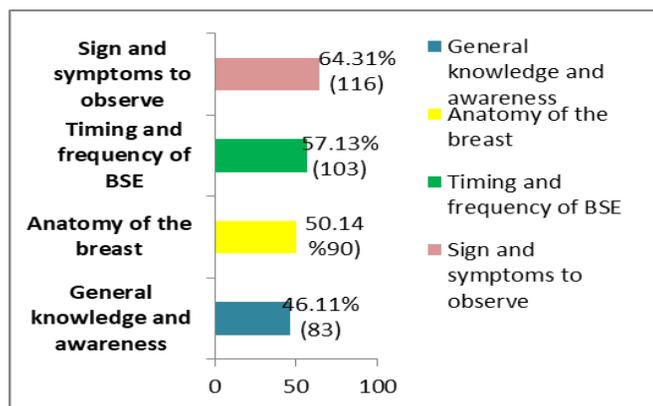
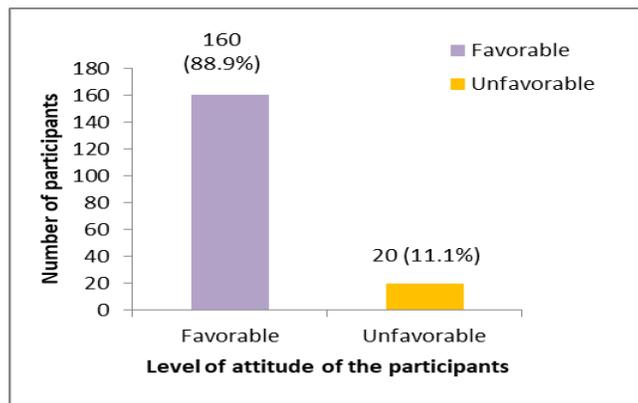


Figure 2 shows that out of 180 participants, 83(46.11%) responded correctly to general knowledge and awareness questions, 90(50.14%) responded correctly to anatomy of breast questions, 103(57.13%) responded correctly to timing and frequency of BSE and 116(64.31%) responded correctly to signs and symptoms to observe while performing BSE.

Figure 3: Frequency and percentage distribution of attitude score of the participants (n=180)



Section III: Findings related to the association between knowledge, attitude and practice on breast-self examination and selected demographic variables among female students of higher secondary in selected schools of Shillong, East Khasi Hills, Meghalaya

Table 2: Association between knowledge on breast self-examination among female students of higher secondary and selected demographic variables.(n=180)

Demographic Variables	Good	Average	Poor	P-Value
Class				

Figure 3 shows that out of 180 participants, 160 (88.9%) have favourable attitude and only 20 (11.1%) have unfavourable attitude towards breast self-examination.

Figure 4: Frequency and percentage distribution of practice score obtained by the participants.(n=180)

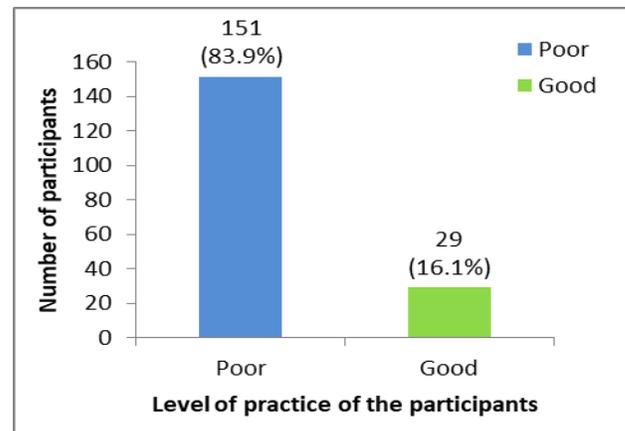


Figure 4 shows that out of 180 participants, only 29 (16.1%) of the participants have good practice and 151 (83.9%) of the participants have poor practice.

XI	23	56	11	0.037*
XII	34	53	3	
Stream				0.001*
Arts	8	41	11	
Commerce	18	40	2	
Science	31	28	1	
Religion				0.368
Christian	44	92	14	
Hindu	9	7	-	
Islam	2	3	-	
NiamTynrai	2	7	-	
Mother's Qualification				0.111
Illiterate	-	7	-	
Primary	19	52	8	
Secondary	15	20	3	
Higher Secondary	7	14	1	
Undergraduate	11	15	2	
Post Graduate	5	1	-	
History of Breast Disease				0.190
Yes	2	4	2	
No	55	105	12	

*Significance at $p \leq 0.05$ level

Table 2 depicts the association between knowledge and selected demographic variables. There is a significant association between knowledge on breast self examination and class of the participants ($p=0.037$). Significant association is also seen between knowledge on breast self examination and the stream of the participants are ($p=0.001$). There is no significant association of knowledge with religion, mother's qualification and family history of breast disease.

Table 3: Association between attitude of the participants on breast self-examination and selected demographic variables (n=180)

Demographic Variables	Favorable	Unfavorable	P-Value
Class			0.343
XI	78	12	
XII	82	8	
Stream			0.185
Arts	51	9	
Commerce	52	8	

Science	57	3	
Religion			
Christian	133	17	
Hindu	16	-	
Islam	4	1	0.210
NiamTynrai	7	2	
Mother's Qualification			
Illiterate	7	-	
Primary	68	11	
Secondary	31	7	
Higher Secondary	21	1	
Under Graduate	27	1	0.342
Post Graduate	6	-	
History of breast disease			
Yes	5	3	
No	155	17	0.046*

*Significance at $p \leq 0.05$ level

Table 3 depicts the association between attitude and the selected demographic variables. There is a significant association between knowledge of the participants on breast self examination and family history of breast diseases ($p=0.046$). No significant association is seen between attitude and class, stream, religion and mother's qualification.

Table 4: Association between practice of the participants regarding breast self-examination and selected demographic variables.(n=180)

Demographic Variables	Good	Poor	P-Value
Class			
XI	16	74	
XII	13	77	0.543
Stream			
Arts	11	49	
Commerce	7	53	
Science	11	49	0.518
Religion			
Christian	25	125	
Hindu	2	14	
Islam	1	4	1.000
NiamTynrai	1	8	

Mother's Qualification			
Illiterate	1	6	0.275
Primary	16	63	
Secondary	6	32	
Higher Secondary	5	17	
Under Graduate	1	27	
Post Graduate	-	6	
Family history of breast disease			
Yes	1	7	1.000
No	28	144	

*Significance at $p \leq 0.05$ level

Table 4 depicts that there is no significant association of practice regarding breast self-examination with class, stream, religion, mother's qualification and history of breast cancer as the p value is more than 0.05 level of significance.

Discussion

The present study "Knowledge, attitude and practice on breast self examination among female students of higher secondary in selected schools of Shillong, East Khasi Hills, Meghalaya" is one of the few studies conducted among students in this region to assess the level of knowledge, attitude and practice on breast self examination. The study also aimed to assess the association of knowledge, attitude and practice with selected demographic variables.

In the present study, it was found that among 180 female higher secondary students, 117(65%) have average knowledge, 34(18.9%) have good knowledge and 29(16.1%) have poor knowledge on breast self examination. This showed that majority of the participants have average knowledge on BSE. The study also revealed that knowledge regarding the signs and symptoms to observe while performing BSE was the highest (64.31%) and knowledge on general knowledge and awareness on breast cancer and breast self

examination was the lowest (46.11%). These results are congruent with a similar study done by Pandita S. et al., among female undergraduate students in Bangalore found that the overall correct rate was around 51% indicating that most respondents have modest knowledge about BSE.

In the present study, knowledge on BSE was found to be statistically associated with class and stream of the students. In a similar study conducted by Woldelessie F. et al., among female preparatory students in Ethiopia, low family income and lack of BSE awareness were found to be associated with poor knowledge.

In the present study, a favourable attitude towards BSE was observed in majority of the participants (88.9%) which is similar to the study conducted by Velayuthan C.K and Gopinath V. among female medical students which revealed that out of 100 participants, majority of the students have positive attitude towards breast self examination.

In the present study, statistically significant association was found between knowledge on BSE and family history of breast disease.

In the present study, regarding the practice of breast self examination, majority have poor practice (83.9%) and only 16.1% of the students have good practice. The result corresponds to a similar study conducted by Fon Peter

Nde et al. among female undergraduate students in University of Buea revealed that only 9% among the 166 female students knew how to perform breast self examination.

In the present study, no statistically significant association was found between practice and selected demographic variables.

Conclusion

Based on the findings of the present study, it can be concluded that majority of the participants i.e., 65% have average knowledge regarding breast self examination. The study also shows that although majority of the participants i.e., 88.9% have favorable attitude towards breast self examination, only 16.1% of the participants have good practice. The low practice rates despite generally positive attitude reveal that there is inadequate knowledge even with good intentions, highlighting a need for targeted health education. The present study also reveals that there is a statistically significant association of knowledge on breast self examination with class and stream of the participants. Statistically significant association is also seen between attitude regarding breast self examination and family history of breast diseases.

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