

# A Study to Assess the Awareness of the Breast Cancer Screening Among Teacher Training Students in Selected Teacher Training Institutions at Mysuru with the View to Conduct Educational Program

Sunitha P.S.<sup>1</sup>, Rashmi P.<sup>2,\*</sup>

## Abstract

**Background:** Cancer is one of the major causes of death both in developed and developing countries. Breast cancer is defined by the uncontrollable proliferation of cells within the breast, encompassing different forms of cancer that impact the breast tissue. The majority of breast cancer cases manifest as painless lumps, while a smaller percentage may exhibit additional symptoms. Breast cancer is amenable to almost complete care if detected in its early stages. Breast self-examination, clinical breast exam and mammography are the preventive techniques to reduce Breast Cancer mortality and morbidity. Breast Self-Examination is a useful and non-expensive self-care activity which can be crowded out monthly by women; this will help to detect malignancy in its early stage which can save lives. **Aim:** The aim of this study is to assess the knowledge regarding breast cancer screening among teacher training students in selected teacher training institutions of Mysuru. **Methods:** This study employed a descriptive survey design to investigate the research questions. The study took place in teachers training colleges situated in Mysuru. The content validity of the questionnaire was evaluated by five experts, and the reliability of the structured knowledge questionnaire was established through the split-half method. The study sample of 60 participants was selected using a non-random convenience sampling technique. The data was gathered through the administration of a structured knowledge questionnaire specifically designed to assess participants' understanding of breast cancer screening. The data was analysed with help descriptive and inferential statistics. **Result:** The result of study reveals that 44 (73.44%) Teacher training students are in the age group of 15–20 years, 16 (26.66%) are in the age group 20–25 years, 07 (11.66%) teacher training students are from Muslim religion, majority (53 (88.44%)) teacher training students are from Hindu religion, 14 (23.44%) teacher training students did not know about breast cancer screening, majority (46 (76.66%)) knew about the breast cancer screening, 05 (8.44%) had family history of breast cancer, majority (55 (91.66%)) did not have family history of breast cancer, 20 (33.44%) did not have previous exposure to any educational programme regarding breast cancer, majority (40 (66.76%)) had previous exposure to educational programme regarding breast cancer screening; 5% of them had poor knowledge, 46.66% had average knowledge and 48.33% of them had good knowledge. A noteworthy

### \*Author for Correspondence

Sunitha P.S.  
E-mail: sunithaygowda555@gmail.com

<sup>1</sup>Assistant Professor, Department Mental Health Nursing, JSS College of Nursing, Ramanuja road, Mysuru, Karnataka, India

<sup>2</sup>Assistant Professor, Department of Medical Surgical Nursing, JSS College of Nursing, Ramanuja road, Mysuru, Karnataka, India

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*correlation was observed between the knowledge scores of teacher training students in relation to breast cancer screening and their demographic characteristics. **Conclusion:** The present study concluded that majority teacher training students are having average knowledge regarding breast cancer screening and suggesting to conduct the educational programme to enhance the knowledge of teacher training students who are playing an important role in the field of education.*

**Keywords:** Breast cancer screening, teacher training students, education, proliferation of cells

## INTRODUCTION

Cancer is a condition characterized by the uncontrolled growth and spread of certain cells in the body. It can arise in any region of the human body, encompassing a multitude of cells. Typically, cells in the body grow and divide to generate new cells as necessary, replacing old or damaged cells [1].

Cancer is a significant contributor to global mortality, affecting countries at different stages of development. Breast cancer is characterized by the uncontrolled growth of cells in the breast. It encompasses various types, depending on the specific cell types involved. Breast cancer can affect different areas of the breast, including the glands responsible for milk production (lobules), the milk-carrying tubes (ducts), and the connective tissue comprising fibrous and fatty components. The majority of breast cancers originate in the ducts or lobules. Cancerous cells have the ability to spread beyond the breast via blood and lymph vessels, resulting in metastasis as they reach other body parts [2].

In India, breast cancer is the second most commonly diagnosed cancer among women. By recommending them to participate on screening programs, early detection is possible. Early breast cancer detection among women cannot be stressed upon enough with 9,00,000 women being diagnosed with breast cancer every year and 5,19,000 deaths a year; world-wide, it is one of the leading causes of death in many developed countries among middle aged women [3].

In India, it is estimated that there are around 2.5 million cases of cancer, with over 0.8 million new cases and 0.5 million deaths reported each year. The most common cancer sites among females in India include the cervix, breast, and oral cavity, with breast cancer accounting for 19 to 34% of all cancer cases in women. According to data from the National Cancer Registry and regional cancer centres, breast cancer is the most prevalent cancer in major cities like Delhi, Mumbai, Ahmedabad, and Kolkata. Unlike developed countries where breast cancer is more common in individuals over 50 years old, in India, it occurs in younger age groups [4].

Breast cancer most commonly presents as a painless lump, and in a smaller proportion of cases, it may be accompanied by other symptoms. Breast cancer is amenable to almost complete care if detected in its early stages. Promoting awareness of breast health is crucial to facilitate early medical intervention among women. This entails being able to identify the signs and symptoms of breast cancer through regular screening practices [4].

Breast self-examination, clinical breast exam and mammography are the preventive techniques to reduce Breast Cancer mortality and morbidity. Breast Self-Examination is a useful and non-expensive self-care activity which can be carried out monthly by women; this will help to detect malignancy in its early stage which can save lives [4].

## NEED FOR THE STUDY

The incidence of breast cancer is gradually overtaking cancer of the cervix, which used to be the major cancer among Indian women. There are more than 540,000 new cases each year, and about 40% of these cases occur in developing countries.

A total of 1,62,468 new cases of breast cancer were registered in the year 2018 and the number of deaths reported were 87,090 and it is estimated that by the year 2020, the number is likely to increase to 1.7 million. Incidence rate begins to rise in the early 30s and peak at 50–64 years among Indian women. The probability of development of breast cancer is one in every 28 women with one in every 22 women and one in every 60 women in urban and rural areas respectively. Breast cancer burden was found to be 41 per 1 lakh women in Delhi followed by Chennai, Bangalore, and Thiruvananthapuram [3].

### **OBJECTIVES**

1. To assess the level of knowledge regarding breast cancer screening among teacher training students in selected training institution at Mysuru.
2. The objective of this study was to examine the relationship between the level of knowledge about breast cancer screening among students in teacher training programs and their specific personal characteristics.
3. View to conduct educational program.

### **OPERATIONAL DEFINITIONS**

1. *Assess*: In this study assess refers to statistical measurement of the antenatal mother's knowledge regarding umbilical cord blood banking and stem cell therapy.
2. *Knowledge*: In this study, knowledge refers to the accurate answers provided by the expectant mothers regarding umbilical cord blood banking and stem cell therapy, as assessed through a structured questionnaire designed to measure knowledge.
3. *Breast cancer*: This study focuses on breast cancer, which is a condition characterized by uncontrolled growth of cells in the breast.
4. *Screening*: In this study, the utilization of a medical procedure or test on individuals who do not show any symptoms of a specific disease, with the aim of assessing their probability of having the disease.
5. *Teacher training students*: In this study, teacher training students refers to students are obtaining the education in B. Ed and D. Ed colleges.

### **HYPOTHESES**

- *H01*: There is no statistically significant relationship expected between the level of knowledge about Breast cancer screening among teacher training students and their selected personal variables.
- *H02*: There is a statistically significant relationship expected between the level of knowledge about Breast cancer screening among teacher training students and their selected personal variables.

### **Assumption**

Teacher training students may have some awareness of the breast cancer screening.

### **Delimitation**

1. The study is delimited to teacher training students of selected colleges at Mysuru only.
2. The study is delimited to assess the awareness of the breast cancer screening among teacher training students on breast cancer; screening was measured by using structured knowledge questionnaire.

### **REVIEW OF LITERATURE**

In Central Kerala, India, a cross-sectional study was carried out to investigate the occurrence of breast cancer and other non-cancerous breast conditions in females. Additionally, the study sought to determine the factors linked to these diseases. A total of 858 women participated in the study, and data

were collected during a medical camp and recorded in Microsoft Excel. The results revealed that out of the 79 women who underwent mammography screening, the average age was  $47.35 \pm 7.6$  years. The majority of the reports (40.5%) indicated BIRADS 1, followed by 38% with BIRADS 2, 19 with BIRADS 3, and 2.5 with BIRADS 4.

A cross-sectional study was conducted in the tribal area of Raigad to assess the knowledge, attitude, and practice of breast cancer and breast self-examination (BSE) among female members of self-help groups (SHGs). Among the 100 SHGs in the designated area, a random selection of 10 SHGs was made, consisting of approximately 20 to 25 women per group. This resulted in a total sample size of 200 to 250 women. Data for this study was gathered using a pre-designed and structured questionnaire. The findings revealed that 92.80% of the surveyed women had awareness of breast cancer. However, more than half of them (51.2%) were unaware of the potential for early detection in breast cancer. A notable proportion (54%) lacked knowledge about the risk factors associated with breast cancer, including 26.40% who were unaware of the impact of a positive family history, 10% who had no knowledge of the influence of large breast size, and 6% who were uninformed about the effect of a later first childbirth. The study highlighted that both knowledge and practice of breast self-examination were remarkably low, with only 21.4% of women exhibiting adequate knowledge and merely 2% engaging in regular BSE. The study also revealed that females with at least a primary level of education exhibited higher knowledge levels regarding breast cancer and BSE [5].

A cross-sectional study was conducted to examine the knowledge and attitudes regarding breast cancer among women aged 20–40 years, as well as their knowledge, attitudes, and practices concerning breast self-examination (BSE) within the same age range. The study included 229 female participants falling within the specified age category, and data collection was carried out through questionnaire-based surveys. The study findings indicated that a notable percentage of the participants (37.27%) belonged to the age group of 20–40 years, while a significant proportion (33.18%) had received no formal education. Among the participants, 179 (81.36%) were married and 203 (92.27%) were identified as Hindus. Only 80 (36.36%) of the respondents had heard of breast cancer, with their information primarily obtained from friends (45%) and television (22.5%). Regarding the perception of breast cancer symptoms, the majority of females considered weight loss (41.25%) as a major symptom, followed by breast lump (21.25%) and bleeding nipples (15%), while approximately 22.5% were unaware of any symptoms. Only 11 (13.75%) females were aware of BSE as a method for detecting breast cancer, and among them, only 7 (8.75%) practiced BSE [6, 7].

A cross-sectional study was undertaken in Delhi to evaluate women's knowledge and practices regarding breast cancer screening. A consecutive sampling method was employed to enrol a total of 229 adult women with no previous history of breast cancer. Out of these, data was collected from 222 women using a pre-tested self-administered questionnaire. The study outcomes highlighted the awareness levels of various recognized risk factors for breast cancer, including family history of breast cancer (59.5%), smoking (57.7%), advanced age (56.3%), lack of physical exercise (51.9%), lack of breastfeeding (48.2%), late menopause (37.4%), and early onset of menstruation (34.7%). Notably, higher knowledge scores were observed among women below 30 years of age and those who were unmarried [8–11].

Furthermore, a mixed methods study was conducted in Kannur district, Kerala, to explore the feasibility and challenges involved in implementing a door-to-door breast cancer screening initiative called "ASWAS". The study encompassed 1,049,410 eligible women aged 30 years and above. Data collection was accomplished through a survey methodology. The findings revealed that a significant proportion of the eligible women in the district, amounting to 93.3% (equivalent to 978,771 individuals), were successfully screened through the ASWAS program.

Among the screened individuals, 5,353 (0.55%) were referred to the camp, and 4,326 (80.8%) of them attended. All attendees underwent clinical examination, and fine needle aspiration cytology (FNAC) was performed in 161 cases (3.7%). A total of 470 individuals (10.9%) were referred to the tertiary care centre, and 310 (66%) reported for further evaluation. Among the evaluated cases, 23 individuals (7.4%) were diagnosed with breast cancer. Out of the individuals who were diagnosed, 56% (13 cases) fell within the age range of 45 to 64 years. Additionally, 87% (20 cases) were married, and 91% (21 cases) presented with a breast lump. Approximately 61% (n=14) of the diagnosed cases were in the early stages (stage 1 and 2), while 39% (n=9) were classified as locally advanced cases (stages 3 and 4).

A descriptive study was conducted to assess the knowledge, attitudes, and practices regarding breast cancer among female undergraduate students at Government College in Koppal, Karnataka. The study involved 396 students enrolled in the degree college, and data collection was done through a pre-tested and semi-structured questionnaire, following the acquisition of informed consent. The results of the study indicated that over 80% of the participants were aware of breast cancer, but their knowledge about various aspects of the disease was limited. More than half of the participants had a positive attitude, believing that they were not at risk of breast cancer, and expressed willingness to practice breast self-examination (BSE) in the future. However, only 5.28% of them reported having performed BSE in the past.

A cross-sectional study was conducted to assess the knowledge and awareness of breast cancer among young women in the United Arab Emirates. A total of 492 females aged 25–45 years were selected using a convenience sampling method, and the data were collected through an interview-based questionnaire. The result of study reveals that the mean age of the participants was 33.5 years. Almost 27% of the participants received High school degree. The average knowledge of the population was 51%; the majority (89%) knew that breast cancer is common and 45% knew that it affects ages above 40 years. The knowledge of signs and symptoms was 53%, and more than half (57%) of the participants knew that the most common presenting sign of breast cancer is a breast lump. The knowledge of risk factors was 43%; almost 93% knew that cancer can be detected early; and 93% knew that early diagnosis can improve the outcome; the total knowledge of screening method was 67% [12].

## **METHODOLOGY**

### **Research Approach and Design**

The present study is to assess the awareness of the breast cancer screening among degree students of the selected colleges at Mysuru. A descriptive research design was chosen for this study.

### **Method of Data Collection**

- *Setting of the study:* Teacher training institutions in Mysuru.
- *Population:* Teacher training students.
- *Sampling procedure:* Convenience study.
- *Sample size:* 60 Teacher training students.
- *Sampling frame:*
  - *Study population:* Teacher training students.
  - *Subject eligibility:*
    - *Inclusion criteria:* The participants included in the study were teacher training students who met the criteria of being available at the time of data collection and willing to participate in the study.
    - *Exclusion criteria:* Teacher training students who are not willing to participate in the study.

### **Data Collection Methods**

1. Ethical clearance was obtained from Institutional ethical committee.
2. Prior permission was obtained from concerned administrative authority.
3. Selected the samples based on the inclusion criteria and maintained the confidentiality.

4. Obtained written consent from study samples.
5. Collected data by conducting structured interview schedule.

### **Data Collection Tools**

- *Section A:* Proforma for selected personal variables to collect baseline data.
- *Section B:* Structured knowledge questionnaire to assess knowledge regarding breast cancer screening.

### **Personal Variables**

The personal variables were used to collect the sample characteristics like age, year of study, gender, marital status, religion, family history of breast cancer, previous knowledge regarding breast cancer screening.

### **Structured Knowledge Questionnaire**

The assessment tools comprised of a questionnaire consisting of 17 items related to breast cancer screening. Each item in the questionnaire presented participants with four response options. A score of one was assigned to the correct response, whereas an incorrect answer was given a score of zero. The total score ranged from 0 to 5, indicating poor knowledge, 6 to 10 denoting average knowledge, and 10 to 17 representing good knowledge [13, 14].

### **Content Validity**

Content validity pertains to the degree to which the items included in a measurement tool effectively represent the concepts being evaluated. In this study, the knowledge questionnaire underwent content validity assessment by five experts from the nursing field. It is noteworthy that there was unanimous agreement among all experts, with 100% consensus. Nonetheless, a few suggestions were made to improve certain questions, and these recommendations were duly incorporated into the final version of the questionnaire.

### **Reliability**

Reliability refers to the extent to which an instrument consistently measures the intended attribute it is designed to assess. Assessing the reliability of the instrument is essential to ensure its quality and effectiveness. In this study, the split-half method was employed to determine the instrument's reliability. This method involves dividing the items of the instrument into two halves and comparing the results obtained from each half to assess their consistency. The structured knowledge questionnaire exhibited a correlation coefficient of 0.88, indicating a high level of reliability for the tools used in the study.

### **Pilot Study**

Pilot study was conducted on 05-12-2022 to 08-12-2022. The purpose of pilot study was to find out the feasibility of conducting the study to decide upon the plan of statistical analysis. 10 samples were selected by non-probability convenience sampling technique; the samples were teacher training students available at the time of data collection and written consent was obtained. The data was collected through structured knowledge questionnaire tool, approximately 20 min were taken from each subject to answer the questionnaire and study design was found to be feasible.

### **Procedure for the Data Collection**

The study was approved by the institutional ethical committee and formal administrative permission was obtained to conduct the study at the selected teacher training institutions at Mysore. The participants were provided with detailed information regarding the objective and importance of the study, and they were assured that their responses would remain confidential. Prior to their involvement, the participants willingly provided informed consent, indicating their voluntary decision to participate in the study. The study sample completed the structured questionnaire, which included a personal profile section. Data collection took place from December 20, 2022, to December 23, 2022. After the completion of the data

collection process, the participants were expressed gratitude for their active participation and cooperation [15–18].

### **Plan of Data Analysis**

The data analysis was done through Description statistics and inferential statistics.

#### ***Description Statistics***

- Frequency and percentage were used for analysing the selected personal variables of teacher training students of selected teacher training college at Mysuru.
- Mean, median, standard deviation were used to describe the knowledge regarding Breast cancer screening among teacher training students of selected teacher training college at Mysuru.

#### ***Inferential Statistics***

Chi square was used to determine the association between the knowledge of teacher training students regarding Breast cancer screening and their personal variables.

## **RESULTS**

### **Organization of Findings**

The study findings are organized and presented according to the objectives and hypotheses that were investigated, using the following categories or sections:

- *Section 1:* Summary of the personal characteristics of teacher training students.  
The frequency and proportion of teacher training students categorized based on their personal variables.
- *Section 2:* Description of knowledge score of teacher training students regarding breast cancer screening.
- *Section 3:* Description of Association between level of knowledge of teacher training students regarding breast cancer screening and their selected personal variables.

### **Section 1: Description of Selected Personal Variables of Teacher Training Students**

The study sample comprised of 60 teacher training students of selected teacher training institutions at Mysuru. The selected personal variables were age in years, gender, religion, previous exposure to any educational programme, heard of breast self-examination, and history of breast cancer as shown in Table 1.

#### ***Age in Years***

The data presented in Table 1 and Figure 1 shows that, majority (44 (73.44%)) of teacher training students were in the age group 15–20 years and 16 (26.66%) were in age group 20–25 years.

#### ***Religion***

The data provided in Table 1 and Figure 2 indicates that the majority of teacher training students, specifically 53 (88.44%) were identified as Hindus, while 02 (11.66%) were identified as Muslims.

#### ***Whether You Know About the Breast Self-Examination***

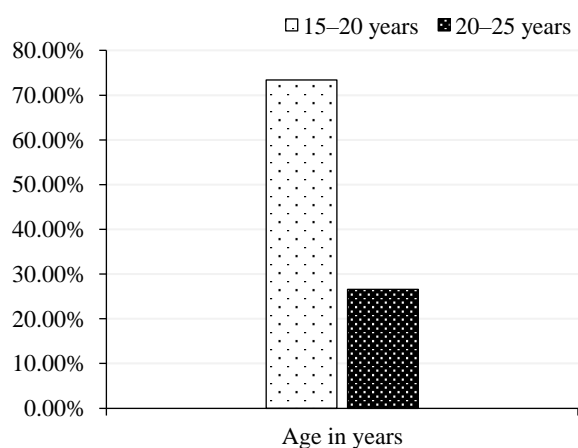
The data presented in Table 1 and Figure 3 reveals that a majority of (46 (76.66%)) teacher training students reported having heard of breast self-examination, while 14 (23.44%) indicated that they had not heard about breast self-examination.

#### ***Family History of Breast Cancer***

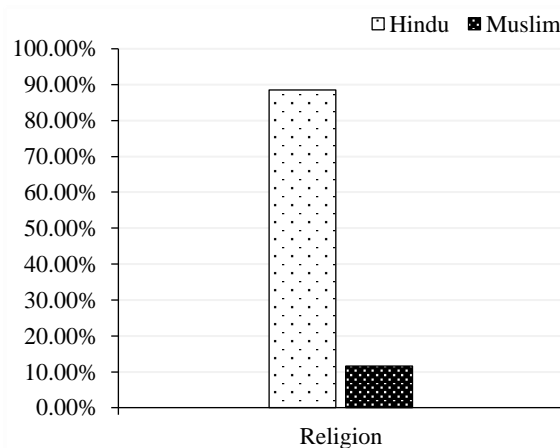
The data presented in Table 1 and Figure 4 indicates that the majority of teacher training students, specifically 55 (91.66%) did not have a family history of breast cancer, while 5 (8.44%) reported having a family history of breast cancer.

**Table 1.** Frequency and percentage distribution of teacher training students according to their selected personal variables (n=60).

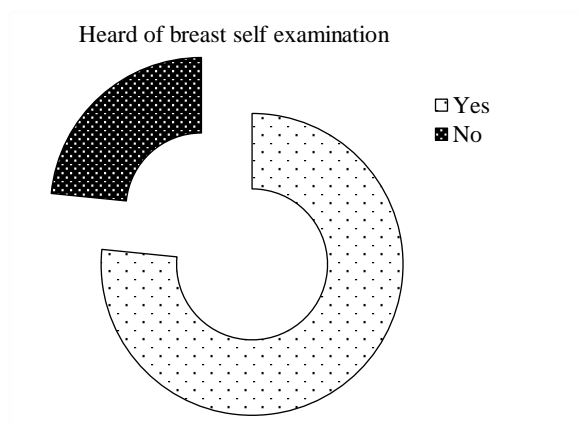
S.N.	Sample characteristics	Frequency (F)	Percentage (%)
1	Age (years)		
	15–20	44	73.44
	20–25	16	26.66
2	Religion		
	Hindu	53	88.44
	Muslim	07	11.66
3	Whether you know about the breast cancer screening		
	Yes	46	76.66
	No	14	23.44
4	Family history of breast cancer		
	Yes	05	8.44
	No	55	91.66
5	Previous exposure to any educational regarding breast cancer screening		
	Yes	40	66.66
	No	20	33.44



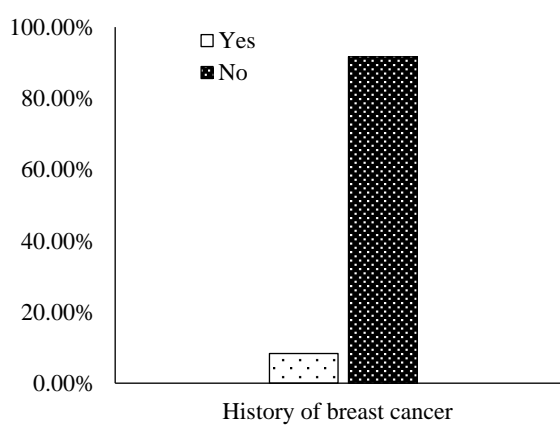
**Figure 1.** Frequency and percentage distribution of teacher training students according to their age.



**Figure 2.** Frequency and percentage distribution of teacher training students according to their religion.



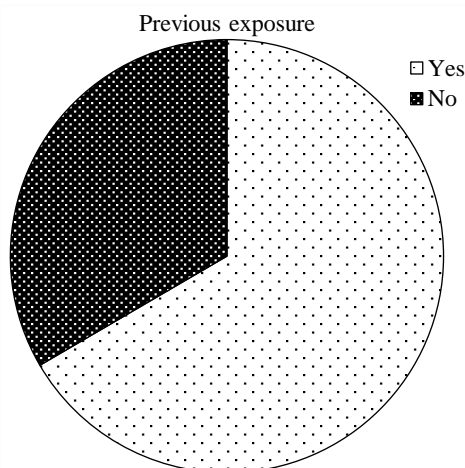
**Figure 3.** Frequency and percentage distribution of teacher training students according to their heard of breast self-examination.



**Figure 4.** Frequency and percentage distribution of teacher training students according to their family history of breast cancer.

### Previous Exposure

The data presented in Table 1 and Figure 5 indicates that the majority of teacher training students, specifically 40 (66.66%) reported having previous exposure to an educational program, while 20 (33.44%) stated that they did not have any previous exposure to an educational program.



**Figure 5.** Frequency and percentage distribution of teacher training students according to their previous exposure.

### Section 2: Knowledge Score of Teacher Training Students Regarding Breast Cancer Screening

1. The study provides information on the frequency and percentage distribution of teacher training students based on their level of knowledge about breast cancer screening.
2. The study presents the mean, median, range, and standard deviation of the knowledge score among teacher training students regarding breast cancer screening.

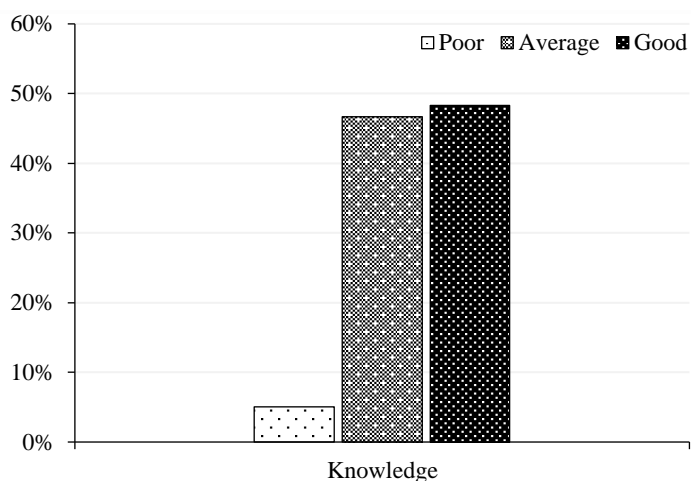
According to the data displayed in Table 2, the majority of teacher training students, specifically 29 students (48.33%) demonstrated a good level of knowledge regarding breast cancer screening. Additionally, 28 students (46.66%) exhibited an average level of knowledge, while a small percentage of 03 students (5%) had a poor level of knowledge regarding breast cancer screening.

**Table 2.** Frequency and percentage distribution of teacher training students according to their level of knowledge regarding breast cancer screening (n=60).

Knowledge level	Frequency (F)	Percentage (%)
Poor	03	5
Average	28	46.66
Good	29	48.33

Data presented in Table 2 and Figure 6 shows that, 03 (5%) teacher training students had poor knowledge, 28 (46.66%) had average knowledge and 29 (48.33%) had the good knowledge regarding breast cancer screening.

Based on the information provided in Table 3, the mean knowledge score of teacher training students was determined to be 10, with scores ranging from 02 to 16. The standard deviation for the knowledge scores was calculated to be 2.731, indicating the degree of variation or dispersion among the scores. The median score was also determined to be 10, representing the middle value in the distribution of knowledge scores.



**Figure 6.** Distribution of teacher training students according to their knowledge scores regarding breast cancer screening.

**Table 3.** Mean, median, range and standard deviation of knowledge score of teacher training students regarding breast cancer screening.

Variable	Mean	Median	Range	Standard deviation
Knowledge	10	10	02–16	±2.731

### Section 3: Results Pertaining to the Relationship between the Knowledge of Teacher Training Students Regarding Breast Cancer Screening and their Specific Personal Variables

The association between the knowledge of teacher training students regarding breast cancer screening and their chosen personal variables was determined by calculating chi-square values. The corresponding data can be found in Table 4.

**Table 4.** Chi-square between level of knowledge of Teacher training students regarding breast cancer screening and their selected personal variables (n=60).

S.N.	Sample characters	Poor and average knowledge	Good knowledge	Chi-square
1	<i>Age (years)</i>			
	15–20	19	25	*4.74#
	20–25	12	04	
2	<i>Religion</i>			
	Hindu	28	25	0.244#
	Muslim	03	04	
3	<i>Whether you know about the breast cancer screening</i>			
	Yes	20	26	*5.27#
	No	11	03	
4	<i>Family history of breast cancer</i>			
	Yes	02	03	0.298#
	No	29	26	
5	<i>Previous exposure to any educational regarding breast cancer screening</i>			
	Yes	16	24	*6.52
	No	15	05	

$\chi^2(1)=3.84, p>0.05$  \*significant# Yates's correction.

The null hypothesis for statistical testing was stated as follows:

- *H01*: There is no statistically significant association between the level of knowledge regarding breast cancer screening among teacher training students and their selected personal variables.

The results displayed in Table 4 indicate a statistically significant association between the level of knowledge of teacher training students regarding breast cancer screening and their selected personal variables, including age, awareness of breast cancer screening, and previous exposure to educational programs on breast cancer screening. As a result, the null hypothesis is partially rejected while the research hypothesis is partially accepted. This indicates that there is a meaningful correlation between the level of knowledge of teacher training students and their selected personal variables concerning breast cancer screening.

## DISCUSSION

The discussion is organized under following headings:

1. Findings related to the selected personal variables of teacher training students.
2. Findings related to the level of knowledge of teacher training students regarding breast cancer screening.
3. Findings related to the association between knowledge of teacher training students regarding breast cancer screening and their selected personal variables.
4. Findings related to the selected personal variables of teacher training students.

### Findings Related to the Selected Personal Variables of Teacher Training Students

The findings of the current study revealed that a majority of teacher training students, specifically 44 (73.44%), fell within the age group of 15–20 years, while 16 (26.66%) belonged to the age group of 20–25 years. In terms of religion, 07 (11.66%) of the students were identified as Muslims, while the majority, 53 (88.44%) were identified as Hindus. It was observed that 14 (23.44%) students were not aware of breast cancer screening, whereas the majority, 46 (76.66%), had knowledge about it. Additionally, 05 (8.44%) students had a family history of breast cancer, while the majority, 55 (91.66%), did not. Furthermore, 20 (33.44%) students had not received any previous educational exposure regarding breast cancer, while the majority, 40 (66.76%), had been exposed to educational materials on breast cancer screening.

These findings are consistent with other studies, which also reported that individuals had information about breast cancer, primarily obtained from health professionals/workers (98.2%), friends/neighbours (83.5%), TV/Radio (76.0%), and printed materials (60.2%). Additionally, 18.5% of respondents reported a positive family history of breast cancer, 49.9% were unaware of how to perform breast self-examination (BSE), and 29.0% knew the procedure but had never practiced it.

### Findings Related to the Level of Knowledge of Teacher Training Students Regarding Breast Cancer Screening

The results of the current study indicated that a significant proportion of teacher training students, specifically 28 (46.66%), possessed average knowledge regarding breast cancer screening. Furthermore, 29 (48.33%) students demonstrated good knowledge, while only 03 (05%) students had poor knowledge on the subject. The knowledge scores of teacher training students regarding breast cancer screening ranged from 02 to 16. The findings also revealed that the mean knowledge score was 10, with a median value of 10 and a standard deviation of  $\pm 2.731$ .

The above study findings are supported by the study conducted to assess the 'Awareness about Breast Cancer and Its Screening among Rural Egyptian Women.' The study revealed that 46.9% of participants had moderate and high knowledge scores, and nearly 40% of the participants demonstrated knowledge about breast cancer and its screening.

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### **Findings Related to the Association Between Knowledge of Teacher Training Students Regarding Breast Cancer Screening and Their Selected Personal Variables**

Study findings revealed that there was a statistically significant association between the level of knowledge of teacher training students regarding breast cancer screening and their selected personal variables viz age, heard about breast cancer screening and previous exposure of educational programme on breast cancer screening. Therefore, based on the study findings, the null hypothesis is partially rejected and the research hypothesis is partially accepted. This indicates a notable connection between the knowledge level of teacher training students and their chosen personal variables.

These findings are supported by previous studies which also found that the knowledge and attitude about breast cancer among female teachers varied significantly based on their age and marital status. Specifically, those in the age group of 46–55 years and those who were married had higher levels of knowledge about breast cancer compared to others. Most of the participants possessed inadequate knowledge and awareness regarding the symptoms of breast cancer. However, the study also revealed that the teachers showed great enthusiasm to learn about breast cancer and its prevention. Most participants reported that they had not performed any breast examination before, indicating a need for increased awareness and education in this area.

### **Objectives of the Study**

The study aimed to achieve the following objectives:

- Evaluate the level of knowledge concerning breast cancer screening among teacher training students.
- Investigate the relationship between the knowledge regarding breast cancer screening among teacher training students and their personal variables.
- Implement an educational program related to breast cancer screening.

### **Hypothesis**

A significant correlation is expected to exist between the level of knowledge regarding breast cancer screening among teacher training students and their personal variables.

### **Conceptual Framework**

The study's conceptual framework was developed using the system theory model proposed by Von Bertalanffy as a basis.

### **Methodology**

A descriptive survey design was employed for this study, which took place in teachers training colleges situated in Mysuru. In order to ensure the reliability and validity of the research instrument, the content validity of the tool was evaluated by a panel of five experts. The reliability of the structured knowledge questionnaire was assessed using the split-half method. The study included a sample size of 60 participants, which was selected through non-randomized convenience sampling. Data collection involved administering the structured knowledge questionnaire focused on breast cancer screening. The data was analysed with help descriptive and inferential statistics.

### **Salient Findings of The Study**

1. *Findings related to selected personal variables:* The results of the current study indicated that a large proportion, specifically 44 (73.44%), of teacher training students fell within the age range of 15–20 years, while 16 (26.66%) were in the age group of 20–25 years.
2. *Findings related to level of knowledge of teacher training students regarding breast cancer screening:* The findings revealed that the Mean knowledge scores of teacher training students is 10 and it ranged from 02–16. The majority 28 (46.66%) teacher training students had average knowledge, 3 (5%) had poor knowledge and 29 (48.33%) good knowledge regarding breast cancer screening.

3. *Findings related to association between knowledge of teacher training students regarding Breast cancer screening and their selected personal variables:* The study findings indicated a significant statistical association between the knowledge level of teacher training students concerning breast cancer screening and their selected personal variables, including age, awareness of breast cancer screening, and prior exposure to educational programs on breast cancer screening.

## **IMPLICATIONS**

The findings of the present study have implications for general education, nursing education, public administration, nursing administration and nursing research.

### **General Education**

Finding of the study revealed that knowledge of breast cancer screening among teacher training students was average. Teachers are integral part in education system, who play the important role in educating and creating awareness in public. Teachers who are working in the teacher training institutions settings should plan and should take initiative to educate the teacher training students regarding breast cancer screening. Regular education program can be given with other methods of instruction.

### **Nursing Education**

Education plays a crucial role in enhancing and updating an individual's knowledge. Nursing education is transforming to meet the needs raised from societal changes, in order to create awareness among teacher training students. Nurse and nurse educator can make sure that teacher training students studying in the teacher training institutions are given knowledge regarding breast cancer screening by organizing the health talks.

### **Nursing Administration**

Nursing administrators play a vital role in strategizing, coordinating, and implementing awareness programs in teacher training institutions. It is important for administrators to demonstrate active involvement in planning, organizing, and conducting health education programs focused on breast cancer screening.

### **Nursing Research**

The subject holds significant significance within the context of the complexities of the healthcare system addressed in the study. The findings highlight that teacher training students possess an average level of knowledge regarding breast cancer screening. The study emphasizes the necessity for further in-depth research in this field and the implementation of enhanced educational initiatives on this topic. Undoubtedly, the present study can serve as a supportive foundation for future research endeavours aiming to obtain similar outcomes.

## **Limitations**

The limitations of the present study were:

1. The use of non-probability convenience sampling in this study restricts the generalizability of the findings to populations beyond the selected samples.
2. The small sample size of only 60 teacher training students has constrained the generalization of the results beyond the study's specific sample.

## **Recommendations**

Based on the findings of the current study, the following recommendations were put forth:

1. Conducting a comprehensive study on a larger scale would enable the generalization of the findings.
2. Further studies should be undertaken to assess the effectiveness of different educational approaches in enhancing knowledge about breast cancer screening.

## CONCLUSION

The present study focused to assess the knowledge regarding breast cancer screening among teacher training students in selected teacher training institutions of Mysuru. Data was collected from a group of 60 teacher training students using structured knowledge questionnaires. The data was then analysed using descriptive and inferential statistics, and the outcomes were displayed through tables and graphs. The analysis of the findings indicated that a significant proportion of teacher training students, specifically 29 (48.33%), exhibited a satisfactory level of knowledge regarding breast cancer screening.

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