Section: General Surgery

Original Research Article

AWARENESS OF SELF-BREAST EXAMINATION AMONG FEMALE PATIENTS OF REPRODUCTIVE AGE GROUP

D.Monisha Devi[1], Padma S[2], S.K.Manoj[3], Vinoth Kanna.D[4], N.Sathish[5], M.Malathi[6], P Karthick[7]

[1]Postgraduate Resident, Department of General Surgery, Trichy SRM Medical College hospital and research centre, Irungalur, Tamil Nadu, India.
[2]Professor, Department of General Surgery, Trichy SRM Medical College hospital and research centre, Irungalur, Tamil Nadu, India.
[3]Professor, Department of General Surgery, Trichy SRM Medical College hospital and research centre, Irungalur Tamil Nadu, India.
[4]Assistant Professor, Department of General Surgery, Trichy SRM Medical College hospital and research centre, Irungalur, Tamil Nadu, India.
[5]Senior resident, Department of General Surgery, Trichy SRM Medical College hospital and research centre, Irungalur, Tamil Nadu, India.
[6]Senior resident, Department of General Surgery, Trichy SRM Medical College hospital and research centre, Irungalur, Tamil Nadu, India.
[7]Head of department, Department of General Surgery, Trichy SRM Medical College hospital and research centre, Irungalur, Tamil Nadu, India.

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Corresponding Author:
Dr. D.Monisha Devi,
Email: monishadevims@gmail.com

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ABSTRACT

Background: Worldwide, breast cancer continues to rank among the top causes of illness and death for women. Breast self-examination (BSE) and other early detection techniques are essential, especially in environments with limited resources. So this study aimed to assess the level of awareness about breast self-examination and its performance among women included in the study. **Materials and Methods:** In an analytical cross-sectional study, 370 female patients aged 15–49 years took part during one year. A semi-structured questionnaire including demographics, BSE knowledge and practices, practice barriers, and motivations for BSE was used to gather data. Data were summarized using descriptive statistics, and relationships between awareness ratings and sociodemographic variables were ascertained using inferential statistics (Chi-square and Fisher's exact test). **Results:** Most participants were married (70.81%) and between the ages of 31 and 40 (69.18%). Only 41.08% were well-informed about BSE, despite 78.37% having heard of it. Forgetfulness (71.62%) and a lack of privacy (41.35%) were frequent obstacles to BSE. The most common reason for practicing BSE was advice from medical professionals (71.36%). Age, education level, socioeconomic class, and family history of breast cancer were all substantially correlated with awareness scores ($p < 0.05$), while marital status was not. **Conclusion:** Despite a moderate level of general awareness, there are still gaps in specific understanding and practice regarding BSE. To reduce the morbidity and mortality of breast cancer, BSE should reach all women despite of age group, education, economic status. To improve early identification of breast cancer with routine BSE, focused educational programs are desperately needed to teach the BSE for women who are less educated, and lower socioeconomic groups.

INTRODUCTION

Globally, female breast cancer caused 2.3 million new cases and 670,000 deaths in 2022,[1] estimates suggest that by 2050, the number of cases and deaths will have increased by 38% and 68%, respectively, with low-HDI nations bearing a disproportionate share of these increases. Ten to twenty percent of all instances of breast cancer in India are in young women,[2] and socioeconomic considerations have a major influence on outcomes and access to care.[3] Changes in breast size or shape, lumps, redness or discharge from the nipple, inverted nipple, and changes in the texture or appearance of the breast skin are all symptoms of breast cancer.[4] The primary method of breast cancer screening, mammography, has a low sensitivity (62%–68%) and is less successful in young women and those with dense breasts. While ultrasound is more useful for younger

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women, but needs professional interpretation; mammography is difficult to obtain in rural regions, which delays diagnosis. An inexpensive, non-invasive substitute is self-breast examination.[5] Research studies have reported that Breast self-exams detect breast masses.[6] Significant delays in diagnosis occur for a small percentage of breast cancer patients; research shows that roughly one in six of these women had symptoms other than a breast lump.[7]

In addition to encouraging breast health awareness, self-examination, and clinical breast examinations (CBE) for early diagnosis, current early detection initiatives mainly concentrate on patient, community, and professional education and awareness.[8] Breast cancer survival is greatly increased by early-stage treatment. Women need to be informed about the disease, its symptoms, and fundamental preventative techniques like breast self-examination (BSE) to guarantee early identification.[9] A screening technique called breast self-examination (BSE) involves women looking for lumps, edema, or abnormalities in their breasts. The entire breast area, including the lymph nodes, underarms, and upper chest, should be examined using appropriate procedures during a monthly breast self-examination (BSE). Light, medium, and strong pressure should be applied three times to each location. The concentric circle, wedge section, and vertical strip procedures are among the detection methods. To do a methodical, careful, and precise examination without squeezing the tissue, women should use two or three fingers with their thumb outstretched and the sensitive palmar pads.

In environments with limited resources, early breast cancer identification and management depend on encouraging BSE, raising knowledge of early symptoms, and providing prompt referrals.[10] So this study aimed to assess the level of awareness about breast self-examination and its performance among women included in the study.

Objectives

- To assess the level of awareness about breast self-examination and its performance among women included in the study.
- To examine any barriers or misconceptions that may prevent women from regularly performing self-examinations.

MATERIALS AND METHODS

An analytical cross-sectional study was carried out to determine awareness of self-breast examinations (SBEs) among female patients of reproductive age who visit the General Surgery Outpatient Department (OPD) at Trichy SRM Medical College and Hospital. The study, which involved female patients ages 15 to 49, was conducted over one year.

Inclusion criteria were female patients in the designated age group who were attending the General Surgery OPD. The participants were selected using a non-probability sampling method, convenience sampling.

Exclusion criteria included women who were pregnant or lactating mothers, had any physical or mental illness, were currently on hormone therapy, had breast implants or prostheses, or had previously undergone SBE and were unwilling to participate.

The Institutional Ethics Committee of Trichy SRM Medical College and Hospital gave its consent for this study to be carried out. The goal and scope of the study were explained to each participant, and before data collection, informed consent was acquired. A structured questionnaire measuring participants' knowledge, and habits about breast self-examination (BSE) was used to gather data. The questionnaire was translated into the local language. A semi-structured questionnaire intended to evaluate participants' knowledge and behaviors about breast self-examination (BSE) was used to gather data. The participants were asked if they were familiar with BSE and if they knew how to do it. BSE practitioners were questioned about when they started practicing (less than 25, 25, or >25 years old), as well as whether they did so before, during, or after their periods, or simply when they had a complaint. Participants were questioned about the frequency of BSE (monthly, occasionally, only when it comes to mind, or not at all), the body position used (standing or sitting in front of a mirror, or not known), and how they palpated the breast (using one finger, the palm and three fingers, or whether they were unaware of the correct method) intending to evaluate technique. Lastly, participants were asked if they were unsure of what to check for during BSE, or if they looked for indicators such as nipple discharge, lumps, or nipple retraction. The awareness score was computed as the total score of eight, and the correct responses were awarded one mark. Poor knowledge was defined as a score of 0–3, average knowledge as a score of 4-6, and good knowledge as a score of 7-8.

The collected data were entered and analysed using IBM software SPSS version 21. Descriptive statistics, including mean, standard deviation, and range, were computed, and continuous variables were examined for normality using the proper statistical tests. The frequency and percentage of answers for every question were computed for categorical data. The Chi-square or Fisher's exact test, as appropriate, was used to compare BSE awareness levels across a range of demographic characteristics, such as age, literacy level, education, and socioeconomic status.

RESULTS

This study was conducted among 370 participants to assess the awareness of breast self-examination. Most participants (69.18%) were between the ages of 31 and 40, followed by those between the ages of 41 and 49 (15.94%) and 15 and 30 (14.86%). The majority of participants (70.81%) were married, whereas 29.18% were single. In terms of educational

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attainment, 9.18% had only completed primary school, 28.37% had graduated, and 62.43% had finished senior secondary education. According to socioeconomic level, 42.16% of people were middle class, 14.32% were high or upper-middle class, and 43.51% were lower middle or lower class. Merely 4.05% of the individuals disclosed a prior family history of breast cancer, whereas 95.94% did not have any such history.

Table 1: Descriptive data of participants (n = 370)

S No	Variables		Frequency	Proportion
1	Age	15 – 30 years	55	14.86%
		31 – 40 years	256	69.18%
		41 – 49 years	59	15.94%
2	Marital status	Married	262	70.81%
		Unmarried	108	29.18%
3	Educational status	Primary school	34	9.18%
		Senior secondary	231	62.43%
		Graduation	105	28.37%
4	Socio-economic status	Upper/upper middle	53	14.32%
		Middle	156	42.16%
		Lower middle/Lower	161	43.51%
5	Previous family history of breast carcinoma	Yes	15	4.05%
		No	355	95.94%

Table 2 shows the awareness regarding breast self-examination among participants. Of the 370 participants, 63.24% said they knew how to perform breast self-examination (BSE), and 78.37% said they had heard of it. Of those surveyed, over half (53.24%) reported starting BSE at or around age 25. According to 44.59% of respondents, BSE should only be performed at the right time, such as after menstruation. When questioned about the proper technique, 38.64% of respondents correctly identified using the palm and three fingers for palpation, while the remaining respondents either employed improper techniques or were unaware of the correct technique. Regarding frequency, 48.37% of individuals said they performed BSE on a monthly or sporadic basis. In terms of body posture during BSE, 41.08% of respondents said that standing or sitting in front of a mirror was the proper position. Lastly, 63.78% of participants correctly identified symptoms that should be looked for during BSE, including nipple retraction, lumps, and discharge.

Table 2: Item analysis of awareness regarding Breast Self-examination (n = 370)

S No	Awareness items	Correct response	Proportion
1	Ever heard of self-breast examination	290	78.37%
2	Know how to perform a self-breast examination	234	63.24%
3	When did you start self-breast examination	197	53.24%
4	When do you perform a self-breast examination?	165	44.59%
5	Method to perform self-breast examination	143	38.64%
6	Frequency of performing self-breast examination	179	48.37%
7	Body position used while performing BSE	152	41.08%
8	Symptoms to look for BSE	236	63.78%

Figure 1 illustrates that 32.16% of individuals had an average level of awareness on BSE, whereas 41.08% of participants showed good knowledge. Nonetheless, 26.75% of those surveyed showed inadequate understanding.

Figure 1: Awareness Score among Participants

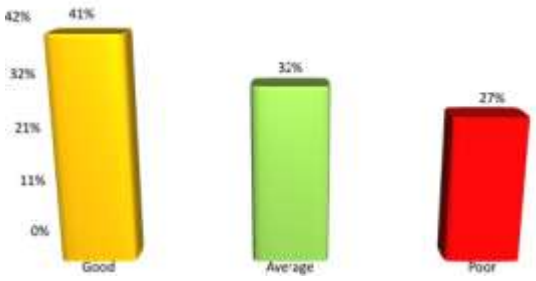

Table 3 shows the association between awareness scores and socio-demographic variables. Age (p = 0.001), educational attainment (p = 0.001), socioeconomic level (p = 0.008), and family history of breast cancer (p = 0.036) were all found to be significantly correlated with awareness evaluations. Higher educated women, those with better socioeconomic status, those with a favorable family history, and women between the ages of 15 and 40 demonstrated greater awareness of breast self-examination. However, there was no significant correlation between awareness levels and marital status (p = 0.163).

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Table 3: Association between awareness scores and socio-demographic variables

S No	Variables		Good/Average (n = 271)	Poor (n = 99)	p value
1	Age	15 – 30 years	42 (76.36%)	13 (23.64%)	0.001
		31 – 40 years	204 (79.69%)	52 (20.31%)	
		41 – 49 years	25 (42.37%)	34 (57.63%)	
2	Marital status	Married	186 (70.99%)	76 (29.01%	0.163
		Unmarried	85 (78.7%)	23 (21.3%)	
3	Educational status	Primary school	10 (29.41%	24 (70.59%)	0.001
		Senior secondary	168 (72.73%)	63 (27.27%)	
		Graduation	93 (88.57%)	12 (11.43%)	
4	Socio-economic status	Upper/upper middle	48 (90.57%)	5 (9.43%)	0.008
		Middle	111 (71.15%)	45 (28.85%)	
		Lower middle/Lower	112 (69.57%)	49 (30.43%)	
5	Previous family history of breast carcinoma	Yes	15 (100%)	0	0.036
		No	256 (72.11%)	99 (27.89%)	

The several reasons why individuals did not undertake breast self-examination (BSE) are depicted in Figure 2. 71.62% of respondents stated that forgetfulness was the most often given explanation. Another major obstacle, cited by 41.35% of participants, was a lack of privacy. A lack of symptoms (27.56%), ignorance of BSE (22.16%), anxiety (14.05%), and fear of identifying an anomaly (11.62%) were among the other hurdles that were reported. These results demonstrate that, in addition to knowledge deficiencies, environmental and psychological issues, including fear, forgetfulness, and lack of privacy, play a substantial role in women's poor BSE practice.

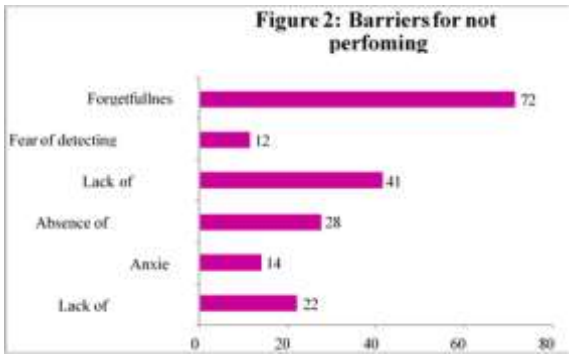
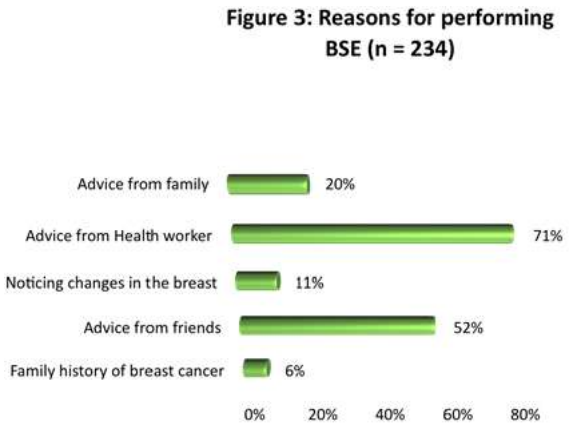


Figure 3 shows the reasons for performing breast self-examination. The most frequent justification given by 71.36% of the 234 participants who reported engaging in breast self-examination (BSE) was guidance from a health professional. More than half (52.13%) carried out BSE after getting advice from friends, whilst 19.65% were inspired by family members. 10.68% performed BSE after noticing abnormalities in the breast, and 6.41% did so because of a family history of breast cancer. These results highlight how crucial social influence and medical experts are in encouraging BSE behaviors in women.



DISCUSSION

The purpose of this study was to evaluate the knowledge and habits of women of reproductive age who visit the general surgery outpatient department about breast self-examination (BSE). The results show that although 78.37% of participants said they were generally aware of BSE, only 63.24% said they knew how to do it appropriately. This is consistent with a survey by Gore S et al,[9] in India, which found that 59.43% of participants knew about BSE. This suggests that general awareness of BSE is comparable in different parts of the country's population. Our study showed that even among individuals who had heard of BSE, many lacked the specific information needed to conduct it successfully, as only 38.64% of participants correctly identified the precise manner of performing BSE—using the palm and three fingers. According to Rangari A et al,[4] only 60.4% of women knew the correct method and performed BSE every month, despite the fact that 49.1% of them were aware of it. Only 48.37% of participants reported performing BSE regularly or occasionally, and only 41.08% adopted the proper posture (standing or sitting in front of a mirror), which supports this concern. This pattern is supported by research conducted in a number of different countries, such as in Saudi

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Arabia, where Kandhaswamy G et al,[11] found that although 79.6% of women were aware of BSE, only 16.3% correctly implemented it after menstruation. This study highlights the widespread discrepancy between awareness and behavior. In our survey, just 38.64% of participants correctly identified the palm and three fingers technique as the correct one, and many others either employed incorrect methods or were doubtful. This is consistent with data from Raseena P A et al,[12] from Kerala, where 55.7% of respondents said they did not perform because they did not know the right approach.

More than half of the participants in our study (53.24%) said they started BSE around the age of 25, which is comparable to results from Sharma I et al,[13] in Nepal, where 96.7% of participants were aware that BSE should start in their 20s. Although timing is also important, only 44.59% of participants were aware that BSE should be performed after menstruation, which is crucial for increasing detection accuracy because of hormonal stability during that time. Similarly, Sharma I et al,[13] discovered that while 94% of respondents were aware of the proper frequency of BSE, only 5.4% frequently performed it, highlighting the fact that knowledge alone does not equate to adherence.

Similarly, Choudary et al,[14] discovered that just 23.96% of individuals showed high knowledge about BSE, while 58.42% exhibited average awareness. Comparatively, 41.08% of participants in our survey had good awareness, which may indicate some regional progress; however, a noteworthy 26.75% of individuals still had low understanding. More concerning findings were published by Giri R et al,[15] in Nepal, who found that only 10.7% of women performed BSE, most of them seldom, and that only 14.5% of women had sufficient expertise. A study by Veena K S et al,[16] reported that more than three-fourths of the population does not have adequate knowledge on breast examination. These disparities show how cultural, educational, and regional factors shaped women's awareness and behaviors.

According to comparative data from Hussein D et al,[10] in Ethiopia, women were more likely to do BSE if they had a family history of breast cancer, had higher information, and felt more susceptible. Given that people with a family history of breast cancer had noticeably higher awareness levels, our results further corroborate this association. Similar to our own findings, Tripathy S et al,[17] in Tamil Nadu reported that women under 45 had superior BSE knowledge and practice; younger age groups also had noticeably higher awareness ($p = 0.001$). Our study found a substantial correlation between BSE awareness and educational level, which is in line with findings by Raseena P A et al,[12] ($p = 0.003$), Kandaswamy et al. ($p < 0.005$), and others. Higher educated women were consistently more likely to know the right information and act appropriately. Fascinatingly, the majority of the literature generally supports the idea that education influences BSE practices, even if Sharma et al. did not find a significant correlation between knowledge and sociodemographic characteristics.

The majority of participants in Raseena P A et al,[12] study learned about BSE from friends and family, with only 7.5% having obtained information from medical experts. This calls into question the accuracy and dependability of information that is being disseminated informally. The most frequent motivators for BSE practitioners in our study were health professionals, indicating that enhancing their involvement in patient education may increase the uptake of BSE.

Despite a reasonable level of awareness, this study found several obstacles that prevent women from regularly performing breast self-examinations (BSEs). The most often mentioned barrier was forgetfulness (71.62%), which was followed by lack of privacy
(41.35%), lack of symptoms (27.56%), and ignorance (22.16%). Women were also significantly discouraged from doing BSE by psychological factors as worry (14.05%) and fear of finding an abnormality (11.62%). These results are in line with earlier research, such as that of Apatic R et al,[18] from Croatia, who found that 32.6% of women stated ignorance and 46.8% of women cited forgetfulness as reasons for not performing. Similarly, a Rajasthani study by Kunawat et al,[19] revealed that 94.69% of women were not aware of the BSE stages, highlighting a pervasive educational disparity.

Advice from medical professionals was the most important motivator for women who did do BSE (71.36%), followed by support from friends (52.13%) and family (19.65%). A lower percentage-initiated measures because of a family history of breast cancer (6.41%) or after observing breast alterations (10.68%). These findings demonstrate how important professional advice and interpersonal interaction are in advancing BSE. This is corroborated by Cassidy C M et al,[20] systematic review, which also highlighted that access to healthcare and a lack of awareness are ongoing obstacles to cancer screening, particularly in rural areas.

Our findings imply that self-initiated screening practices like BSE still need more attention, even though India has implemented population-based screening programs under the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS) since 2010.[21] These programs include clinical breast exams conducted through primary health centers. Frontline worker-led health education initiatives may play a key role in removing emotional and informational obstacles, which would enhance women's early detection practices.[21]

CONCLUSION

Summary

- According to the survey, only 41.08% of participants showed good awareness of breast

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self-examination (BSE), 63.24% knew how to do it correctly, and 78.37% had heard of it.

- Advice from friends (52.13%), family (19.65%), and medical professionals (71.36%) were the main sources of motivation for doing BSE, highlighting the significance of social and medical impact.
- However, forgetfulness (71.62%), lack of privacy (41.35%), and lack of symptoms (27.56%) were the main obstacles, suggesting that environmental and psychological variables make it difficult to regularly perform BSE.
- Age, education, socioeconomic level, and family history of breast cancer were all substantially correlated with awareness ($p < 0.05$), while marital status was not.

Conclusion

The findings of this study demonstrate that although most women are aware of breast self-examination (BSE), there are still significant gaps in their understanding of appropriate technique, timing, and consistent practice. Many cited forgetfulness, lack of privacy, and limited education as major impediments, and just a small percentage showed good awareness and proper BSE practices. Improved awareness and practice were substantially correlated with factors like professional health advice and a greater level of education. These results highlight the necessity of community-based awareness campaigns and planned educational interventions, particularly aimed at underprivileged and less educated groups. Long-term reductions in breast cancer morbidity and death may be achieved by bolstering the role of healthcare professionals and incorporating BSE training into standard primary care services.

Limitations

- The larger sample size might be considered for generalising results.

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