

Awareness and Knowledge about Breast Cancer and Breast Self-Examination among Female Students: A Hospital Based Study

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ABSTRACT

Background- Breast cancer is a significant health concern worldwide, particularly among females, with high incidence rates in India. Early detection through Breast Self-Examination (BSE) methods is crucial for improving survival rates. However, awareness and knowledge about breast cancer and BSE remain inadequate among the population. This study assesses female students' understanding and knowledge levels at SLN Medical College and a nearby women's college in India.

Methods- A self-structured questionnaire was administered to female students over three months, from January 2022 to March 2022. Convenience sampling was employed to select participants from SLN Medical College and a neighbouring women's college. The questionnaire covered various aspects of breast cancer, including risk factors, symptoms, preventive measures, and attitudes towards BSE. Data analysis used descriptive statistics to identify trends and patterns in breast cancer awareness and knowledge among the participants.

Results- The demographic analysis revealed a diverse distribution among the 160 participants, with the majority aged 18-20 pursuing graduate courses. While a high percentage had heard about breast cancer and recognized the importance of screening, knowledge about symptoms and family history was limited. Only a minority reported familiarity with BSE. Educational interventions were conducted to address knowledge gaps, with a significant proportion expressing interest in learning more about breast cancer.

Conclusion- Addressing knowledge gaps surrounding breast cancer and BSE is critical for improving early detection rates and reducing mortality. Collaborative efforts involving healthcare professionals, policymakers, and educational institutions are essential for implementing effective awareness initiatives.

Key-words: Awareness, Breast cancer, Breast self-examination, Early detection, Knowledge

INTRODUCTION

Breast cancer stands as the most prevalent form of cancer among females, with over one million cases reported annually in India alone. It initiates within the breast tissue, characterized by uncontrolled cell growth

leading to the formation of tumours, detectable through various methods, including x-rays or palpable lumps. While predominantly affecting women, it's important to note that men can also develop breast cancer. This disease ranks as the second most common cancer affecting women globally, trailing only behind skin cancer [1,2].

Symptoms typically manifest as thickened tissue or lumps within the breast or armpit region. Additional indications may include persistent pain, skin texture changes resembling an orange peel, nipple abnormalities, discharge, or alterations in breast size or

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shape. While most breast lumps are benign, prompt medical evaluation is crucial for any concerning changes. Breast screening, widely recommended for women, aids in early detection and management, improving survival rates [3].

Risk factors associated with breast cancer include age, family history, menopausal status, and hormone replacement therapy. Early detection significantly enhances prognosis, highlighting the importance of screening methods like BSE, clinical breast examination (CBE), and mammography. BSE, a simple yet essential practice, empowers women to monitor their breast health regularly, although it should complement rather than replace medical evaluations [4,5].

The burden of breast cancer extends globally, with approximately 1.67 million new cases diagnosed worldwide in 2012, resulting in around 570,000 deaths by 2015. In India, breast cancer ranks as the most prevalent cancer in urban areas, comprising over 30% of all cancer cases among women. Conversely, in rural regions, it follows cervical cancer as the second most common malignancy. Notably, the incidence peaks at around 40 years of age in Asian countries, diverging from Western nations where it's more prevalent among 60-year-olds [6,7].

India, along with China and the USA, shoulders a significant portion of the global breast cancer burden, with increasing incidence and mortality rates. Urbanization and lifestyle changes contribute to this rise, accentuating the importance of awareness and preventive measures. As such, addressing the challenges posed by breast carcinoma remains a critical health priority in India [8].

MATERIALS AND METHODS

The methodology employed in this study aimed to assess the awareness and knowledge about breast cancer and breast self-examination among female students from SLN Medical College and a nearby women's college. The study was conducted over three months, from January 2022 to March 2022.

Exclusion criteria- Female students below 18 years of age who were unwilling to participate were excluded from the study.

Inclusion criteria- The study included female students aged between 18-26 years.

Methodology- A self-structured questionnaire was devised to gather relevant information regarding breast cancer awareness and knowledge about BSE. The questionnaire encompassed various aspects related to breast cancer, including risk factors, symptoms, preventive measures, and attitudes towards BSE.

Convenience sampling was utilized to select participants for the study. Female students from SLN Medical College and a neighbouring women's college were targeted as the primary population for data collection. This method allowed for easy access to participants within the specified demographic.

Depending on their convenience, the questionnaire was distributed among the targeted participants in physical or digital format. For students at SLN Medical College, physical copies of the questionnaire were distributed, while an online survey was conducted using Google Forms for students from the nearby women's college. Participants were requested to respond to the questionnaire comprehensively and honestly. Participants were given a specified period to complete the survey, ensuring timely data collection.

Statistical analysis- Descriptive statistics were employed to analyze the collected data. Statistical measures such as frequencies, percentages, means, and standard deviations were calculated to summarize the responses obtained from the questionnaire. This analysis facilitated the identification of trends, patterns, and disparities in breast cancer awareness and knowledge among the study participants.

Ethical approval- Before the commencement of the study, ethical approval was obtained from the relevant institutional review board or ethics committee.

RESULTS

The demographic characteristics of the study participants revealed a diverse distribution. Most participants fell within the age range of 18-20 years (61.8%), with smaller proportions in the 21-23 years range (31.2%) and a minority aged 24-26 years (6.8%). Regarding educational background, the participants were spread across various fields, with 33.7% pursuing medical courses, 38.1% in non-medical classes, and 28.1% in arts.

Regarding educational qualifications, the majority were graduates (70%), followed by post-graduates (19.3%) and individuals holding diplomas (10.6%). Geographically, 70% of participants resided in urban areas, while the remaining 30% were from rural regions (Table 1).

Table 1: Socio-demographic characteristics of study participants.

Variable	n=160	Percentage (%)
Age		
18-20	99	61.8
21-23	50	31.2
24-26	11	6.8
Course		
Medical	54	33.7
Non-medical	61	38.1
Arts	45	28.1
Educational qualification		
Diploma	17	10.6
Graduate	112	70
Post graduate	31	19.3
Residence		
Urban	112	70
Rural	48	30

n=Number of participants

Analysis of knowledge and awareness regarding breast cancer among the study participants indicated varying levels of familiarity with the disease. The majority (88.75%) had heard about breast cancer, yet a considerable proportion (63.75%) reported not knowing anyone affected by the disease. However, a large percentage (84.37%) acknowledged the utility of screening in early detection. Awareness of breast cancer symptoms was reported by 60.62% of participants, and only a tiny fraction (11.25%) had a family history of the disease.

Table 2: Knowledge regarding breast cancer among study participants.

Question	n	Percentage (%)
Heard about breast cancer	142	88.75
Don't know anyone with breast cancer	102	63.75
Do you think screening helpful in early detection of breast cancer	135	84.37
Do you know breast cancer symptoms	97	60.62
Family history of breast cancer	18	11.25

n=Number of participants

Regarding Breast BSE, a substantial portion (36%) claimed familiarity with the procedure, while the majority (63%) reported not knowing how to perform it, and a negligible proportion did not respond (1%) (Fig. 1). Educational interventions were conducted to address the knowledge gap among participants. It was found that a significant proportion of participants were taught about BSE by friends, indicating informal channels of education. Additionally, 42.8% of participants had heard about mammography, suggesting some level of awareness about screening methods. Notably, 113 out of 160 participants expressed interest in learning more about breast cancer, prompting the delivery of an online presentation focusing on proper BSE techniques at the conclusion of the survey.

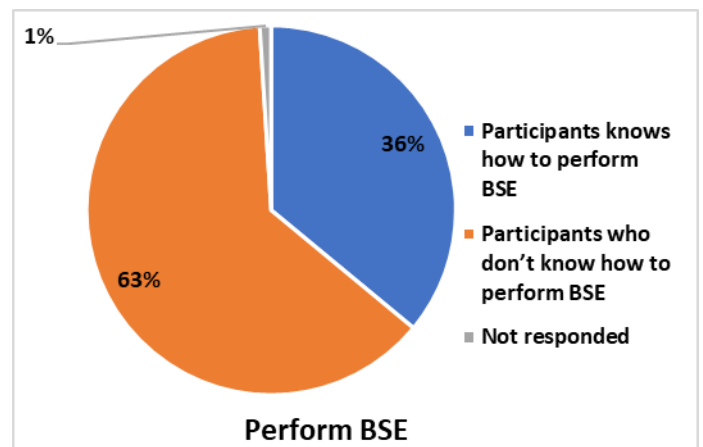


Fig. 1: Breast Self-Examination (BSE) among study participants.

Age emerged as a factor influencing knowledge levels, with students aged 19-22 exhibiting the highest awareness of breast cancer, followed by those aged 22-24. Further analysis revealed variations in knowledge across different student categories (Fig. 2). Medical students demonstrated the highest knowledge level (34%), followed by non-medical students (27%) and arts students (22%).

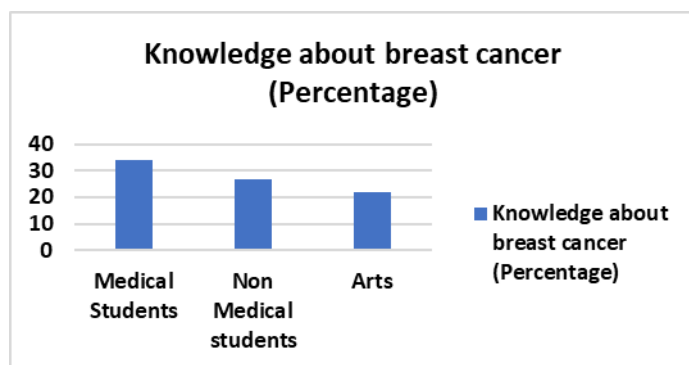


Fig. 2: Knowledge about breast cancer in percentage.

DISCUSSION

Breast cancer awareness and knowledge about BSE among female students were assessed in several studies. One study found that 40% of recruited participants knew BSE, while 60% had minimal or no knowledge [9]. Another study conducted among undergraduate students at Imo State University revealed a high level of awareness and knowledge about BSE, which had a favourable impact on their attitudes towards it [10]. A study among medical and non-medical undergraduate students showed insufficient knowledge regarding breast cancer and BSE, highlighting the need for improved education and awareness [11]. A cross-sectional survey conducted among allied health students in Indonesia and Pakistan found that age, education, residence, and marital status were significantly related to knowledge about breast cancer signs and risk factors [12]. Lastly, a study in India emphasized the importance of BSE as a screening tool and highlighted the need for awareness campaigns and early detection programs [13].

The findings reveal a concerning lack of awareness and knowledge regarding Breast Self-examination (BSE) among the surveyed population. This knowledge deficit is particularly troubling given the high mortality rate associated with late-stage presentations of breast cancer, a phenomenon observed more frequently in developing countries like India. Early-stage breast cancer

cases boast a considerably higher cure rate, ranging from 84% to 98%, while metastatic cases exhibit alarmingly low survival rates, plummeting to as low as 24% [14,15].

Several factors contribute to the delayed presentation of breast cancer among Indian females. Chief among these is the inadequate awareness and knowledge regarding cancer screening methods such as BSE and clinical breast examination [16]. The level of awareness among women regarding breast cancer significantly influences their healthcare-seeking behaviours. Insufficient knowledge often leads to delayed diagnosis, resulting in advanced-stage disease where treatment options offer limited benefit [17,18].

Obstacles to accessing screening and early detection services include prevalent misconceptions, societal taboos, fear, and inadequate education. Addressing these barriers necessitates comprehensive awareness campaigns and educational initiatives to dispel myths, reduce stigma, and promote proactive health-seeking behaviors among women. While numerous studies have assessed breast cancer knowledge among the general population in India [19,20], our study underscores the persistent gaps in understanding. It highlights the need for targeted interventions to improve awareness and early detection rates.

Despite efforts to reach a broader sample size by distributing the questionnaire to 380 students, only 160 responses were received. The limited sample size may constrain the generalizability of the findings and warrants caution in extrapolating the results to the broader population. Recognizing the critical importance of early breast cancer detection, an online presentation was conducted to educate participants about breast cancer and demonstrate proper BSE techniques. This initiative highlights the potential of online platforms as practical tools for disseminating health-related information and fostering awareness. National breast cancer awareness programs should be intensified, leveraging various media channels and educational platforms to reach a wider audience. Comprehensive awareness strategies are imperative to enhance knowledge and promote proactive health behaviors, ultimately reducing the burden of breast cancer in India. In conclusion, addressing the knowledge gaps surrounding breast cancer and screening methods like BSE is paramount to improving early detection rates and reducing mortality. Collaborative efforts involving

healthcare professionals, policymakers, and community stakeholders are essential to implement effective awareness campaigns and ensure equitable access to screening services across diverse populations.

LIMITATIONS

The study did not assess the long-term impact of the interventions on improving breast cancer awareness and knowledge among the participants. The study included a limited sample size of 160 participants, which may not provide a comprehensive understanding of breast cancer awareness and knowledge among all female students.

CONCLUSIONS

In conclusion, this study underscores the urgent need for heightened awareness and education regarding breast cancer and BSE among female students in India. Despite recognizing the importance of screening, the participants exhibited limited knowledge about symptoms and risk factors, indicating a significant gap in understanding. The findings emphasize the critical role of early detection in improving survival rates and reducing the burden of breast cancer. Addressing these knowledge gaps must be prioritized through targeted interventions, comprehensive awareness campaigns, and educational initiatives. By empowering individuals with accurate information and promoting regular BSE practices, the incidence of late-stage presentations can be reduced, leading to better outcomes for breast cancer patients in India. It is imperative to continue advocating for increased awareness and access to screening services to combat breast cancer effectively. Future research should be needed to conduct larger-scale studies with a more diverse sample to obtain a comprehensive understanding of breast cancer awareness and knowledge among female students in India.

CONTRIBUTION OF AUTHORS

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