Original Article

Knowledge and Practice Regarding Breast Self-Examination (BSE) among Nursing Students Working in A Tertiary Care Hospital Lahore, Pakistan: An Observational Descriptive Cross Sectional Study

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ABSTRACT

Background: Breast self-examination (BSE) is a simple, quick, and cost-free method crucial for the early detection of breast cancer, which significantly reduces morbidity and mortality. Health Sciences students, particularly those in nursing, are ideally positioned to serve as role models and educators on this practice.

Objective: The objective of this study was to assess the knowledge and practice of BSE among nursing students at a tertiary care hospital in Lahore, with a view to identifying gaps that could be addressed through targeted educational programs.

Methods: This observational descriptive cross-sectional study engaged nursing students from various academic levels at a tertiary care hospital in Lahore. Participants were selected through convenience sampling. Adherence to the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement was ensured. Data were collected via a self-administered structured questionnaire and analyzed using SPSS software version 26, focusing on frequencies and percentages of categorical variables.

Results: Of the participants, 63.76% demonstrated a high level of knowledge about BSE, scoring ≥75%. In contrast, 36.23% scored below 75%, indicating a low level of knowledge. Practice of BSE was limited, with only 47% (n=65) of the participants engaging in the practice, and the majority, 53% (n=73), not practicing at all.

Conclusion: Although nursing students show a good understanding of BSE, a significant gap exists between their knowledge and actual practice. This discrepancy highlights the need for enhanced educational interventions to encourage regular BSE practice, which is essential for the effectiveness of breast cancer screening and early detection efforts.

Keywords: Breast Cancer, Breast self-examination, Knowledge, Nursing, Practice, Students.

INTRODUCTION

Breast cancer, a malignant tumor originating from breast cells, is the most common cancer affecting women globally, with more than 1.15 million cases diagnosed annually (3). Despite the common misconception that non-communicable diseases like breast cancer are unpreventable, it is crucial to understand that early detection and intervention can significantly reduce the morbidity, disability, and mortality associated with this disease (2). In Pakistan, the incidence of breast cancer is notably high, the highest in Asia, and demographic trends suggest a continued increase in the coming years (4,5). Unfortunately, in this region, socio-economic and cultural factors such as age, employment status, and a lack of awareness often lead women to seek medical help only at advanced stages of the disease, resulting in 89% of cases diagnosed late and 59% at an advanced stage (9).

Early detection methods like mammographic screening are influenced by various socio-cultural and economic factors (6,7). Among these methods, Breast Self-Examination (BSE) stands out as a simple, quick, and cost-free technique that allows women to identify

abnormalities such as lumps, discharge, or dimpling at an early stage (11). However, barriers such as lack of time, lack of confidence in performing the technique correctly, fear of discovering a lump, and embarrassment related to manipulating the breast often deter women from practicing BSE (12).

In response to the escalating prevalence of breast cancer over the past three decades in Pakistan, which now has an incidence rate second only to that of Jewish populations in Israel and is 2.5 times higher than neighboring countries like Iran and India (14), there is a pressing need to improve early detection. To address this, breast self-examination, along with clinical breast examinations and mammography, are recommended preventive measures (15). Given the critical role that nursing students play as future health personnel, assessing their knowledge, attitudes, and practices concerning BSE is vital. The objective of this study is to investigate these elements among female nursing students at a tertiary care hospital in Lahore, Pakistan, in order to develop targeted interventions aimed at enhancing awareness and effective practice of BSE for early detection of breast cancer.

MATERIAL AND METHODS

An observational descriptive cross-sectional study was conducted over a six-month period at a tertiary care hospital in Lahore, the capital city of Punjab Province and the second most populous city in Pakistan. The study aimed to assess the knowledge and practices regarding breast self-examination (BSE) among nursing students. The target population included nursing students across all academic years, from the first to the final year. Students who were severely ill during the data collection period or who refused to participate were excluded from the study. Using Slovin's formula with a margin of error of 0.05 and a confidence interval of 95%, the required sample size was calculated to be 138 from a population of 210 (n= $N/1+N\ e^2$).

The study was conducted in alignment with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines and adhered to the ethical standards of the Declaration of Helsinki. Approval was obtained from the Institutional Review Board of the Afro-Asian Institute in Lahore. Participants were selected through simple random sampling to ensure representation from each academic year. Written informed consent was obtained from all participants before the initiation of data collection.

Data were collected using a structured self-administered questionnaire, which was validated through a pilot study involving 30 nursing students to assess its reliability and internal consistency. The reliability of the questionnaire was confirmed with a Cronbach's alpha score of 0.8. Respondents received printed copies of the questionnaire, which comprised sections on personal and socio-demographic information, family medical history of breast cancer, knowledge about BSE, and BSE practices. To ensure confidentiality, participants were identified only by codes, with no names collected.

The data were analyzed using SPSS software version 26. Categorical variables were expressed as frequencies and percentages. Knowledge about BSE was evaluated using 14 indicators, with correct responses scored as "3" and incorrect responses as "2". The overall knowledge score was classified as high (75% or above) or low (below 75%). Adherence to good BSE practice was defined as conducting BSE monthly, specifically one week after the onset of the menstrual cycle. Conversely, poor practice was defined as performing BSE at incorrect times, and no practice was defined as not performing BSE at all during the cycle (16,17).

RESULTS

The results of the study revealed that the majority of the nursing students who participated were between the ages of 15 and 20, comprising 55.8% of the sample, with the next largest age group being 21 to 25 years old, representing 29.7%. Detailed socio-demographic characteristics of the participants are provided in Table 1. Regarding the sources of information about breast cancer and breast self-examination (BSE), health professionals were identified as the primary channel, accounting for 51.4% of responses. Friends and television also played significant roles, contributing to 18.8% and 14.5% of the information sources, respectively. Other miscellaneous sources were cited by 15.2% of the respondents.

In terms of marital status, the majority of participants were single, at 76.5%, while 23.9% were married. The study also assessed participants' awareness and knowledge of breast cancer and BSE. Notably, 63.2% of the respondents were aware of BSE, indicating a moderate level of general awareness. Moreover, an equivalent percentage (63.2%) of participants understood the increased risk of breast cancer in the contralateral breast if one breast had already been affected, suggesting a reasonable level of knowledge regarding the implications of a cancer diagnosis in one breast. These findings are further elaborated in Table 1.

Table 1: Participants' knowledge about breast cancer and Breast Self-Examination (n=138)

Variables		n(%)
Have they heard about breast cancer?	Yes	135(97.8%)
	No	3 (2.17%)
Do you have Family history of breast cancer?	Yes	35 (25.4%)
	No	103 (74.6%)
Can early detection improve chances of survival?	Yes	33 (62.3%)
	No	50 (37.7%)
Can Breast Cancer be detected early?	Yes	95 (68.1%)
	No	43 (31.9%)
Know BSE is important in the early detection of breast cancer	Yes	33 (62.3%)
	No	50 (37.7%)
Do you know that changes in the shape and color of the breast are the signs of breast cancer?	Yes	129 (93.4%)
	No	9 (6.52%)
Have you heard about BSE?	Yes	135 (97.8%)
	No	3 (2.17%)
Do you know both male and female can perform BSE?	Yes	20 (14.5%)
	No	45(69.2%)
Know what to look for while performing BSE	Yes	88 (63.2%)
	No	50 (36.8%)
Know the age of 20 to start BSE	Yes	31 (22.4%)
	No	102 (73.9%)
Know BSE should be performed monthly	Yes	60(43.4%)
	No	78 (56.5%)
Know the 3 positions to perform BSE (lying down, standing in front of mirror, showering)	Yes	24 (17.4%)
	No	114 (82.6%)
Know the breast should be felt by the three fingers continuing without lifting fingers	Yes	60(43.4%)
	No	78 (56.5%)
Know BSE is performed only around the breast	Yes	95 (68.1%)
	No	43 (31.9%)
Know that when one breast has a history of cancer, the other is also much likely to have	Yes	88 (63.2%)
	No	50 (36.8%)

Participants' Practice about Breast Self-Examination (BSE)

Among the 138 nursing students who participated in the study, 65 individuals (47%) reported engaging in breast self-examination (BSE). Of these, 38 participants demonstrated adherence to recommended practices for conducting BSE effectively. However, it is significant to note that a majority of the respondents, specifically 53% (n=73), did not engage in the practice of breast self-examination at all. These findings are detailed in Table 2.

Table 2: Participants' Practice about Breast Self-Examination (BSE)

Variables		n(%)
Have you ever practice BSE?	Yes	65 (47%)
	No	73 (53%)
Remaining Responses from (n=65) who performed BSE		
If 'Yes' when did you perform it?	Just a week after each menses	38(76.9%)
	When it comes to mind	12 (18.4%)
	Anytime during menses	8 (12.3%)
	Before menses	7 (10.7%)

At what age did you start performing BSE?	12-17	7 (10.7%)
	18-23	14 (21.5%)
	>24	44 (67.6%)
What method did you start performing BSE?	In front of mirror	44(67.6%)
	Lying Down	7 (10.7%)
	Both	14 (21.5%)
What time do you normally perform Breast self-examination?	Morning	10 (15.3%)
	Afternoon	10 (15.3%)
	Evening	45(69.2%)
How is breast self-examination done?	Palpate with one finger	12 (18.4%)
	Palpate with palm and three fingers	53 (81.5%)
When was the last time you performed BSE?	Last Month	50(76.9%)
	This Month	7 (10.7%)
	Last Year	8 (12.3%)

Knowledge and Practice on BSE with Scoring

The majority of the participants, comprising 63.76%, exhibited a significant high level of knowledge, scoring ≥75%. Conversely, 36.23% of the respondents demonstrated a low level of knowledge, with scores below 75% (Table 4, Figure 1).

Table 3: Knowledge and Practice on BSE with Scoring

Knowledge and Practice Score			N(%)
Knowledge	High Level	≥75% (Score 34)	88(63.76%)
	Low Level	<75% (Score 33)	50 (36.23%)
Practice	Good	BSE at one week after the onset of each menstrual cycle	38 (27.5%)
	Poor	BSE at times other than correct time in the menstrual cycle	27 (19.5%)
	Do not practice	Those who never check their breast at all in the cycle	73 (52.8%)

The majority of respondents, comprising 73 participants do not practice of BSE while only 65 participants do practice of BSE.
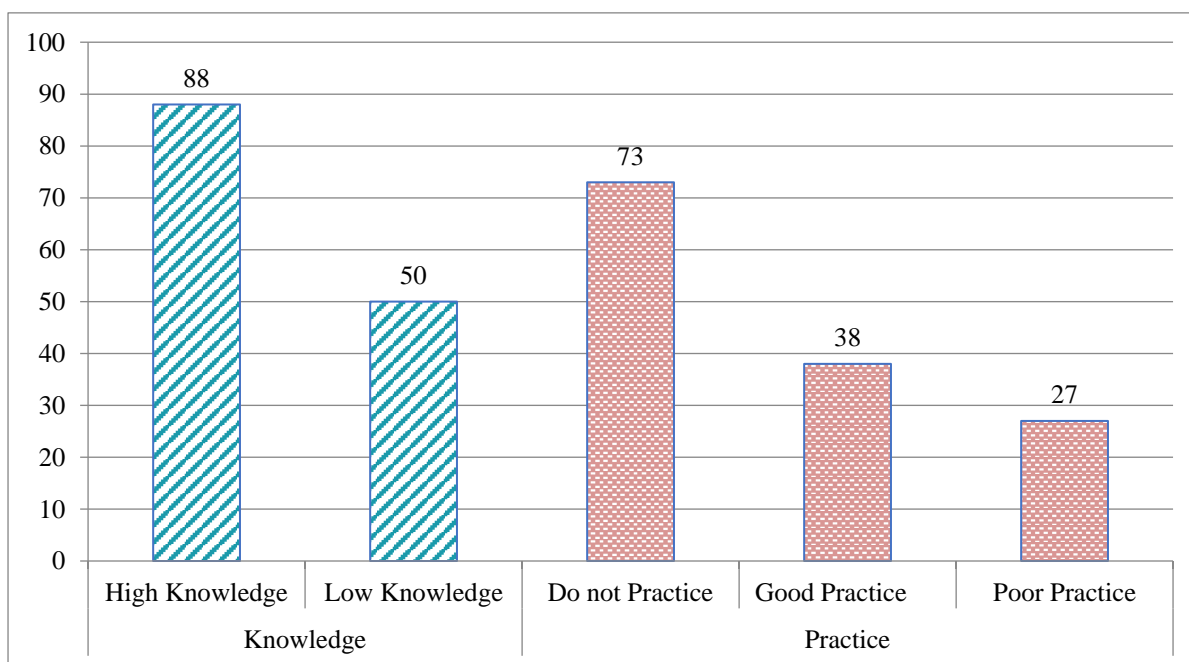

Figure 1: Overall Scoring Criteria

DISCUSSION

Pakistan has the highest incidence of breast cancer in Asia, with projections indicating an increase in rates in the coming years (4,5). This rise underscores the critical importance of early detection methods, such as breast self-examination (BSE), which significantly reduce morbidity and mortality associated with breast cancer. The present study assessed the knowledge and practice of BSE among nursing students in a tertiary care hospital in Lahore, focusing on the behavioral domain's crucial aspects: knowledge, attitude, and practice. It is well-documented that an individual's knowledge and attitude can profoundly influence their preventive practices (18).

In this study, a high percentage of participants, 97.8%, were aware of breast cancer and BSE. This level of awareness is consistent with findings from a university in Malaysia, where 86.5% of participants had information regarding breast cancer, and 95.5% were knowledgeable about BSE (19). Furthermore, 63.76% of the nursing students in this study demonstrated a high level of knowledge regarding BSE, aligning with previous studies in Pakistan (20,21).

Despite the high level of awareness and knowledge, the actual practice of BSE among the participants was relatively low, with only 47% performing the examination. This finding is comparable to research conducted in Saudi Arabia, where 61% of participants reported performing BSE, and another study where 64.2% of participants engaged in the practice (23,24). However, only 27.5% of participants in this study demonstrated good BSE practices, a statistic that mirrors results from a study in Ethiopia (25).

These findings highlight a gap between knowledge and practice that may be attributed to various barriers, including psychological factors such as fear and embarrassment, and practical issues such as lack of confidence in performing the examination correctly. The study emphasizes the need for ongoing health education programs in healthcare settings to boost confidence and motivation among nursing students, thereby improving preventive health behaviors.

The study's strength lies in its adherence to robust methodological standards, including the use of a validated questionnaire and a representative sample size determined by rigorous statistical methods. However, the study's design, being cross-sectional, limits the ability to draw causal inferences. Additionally, the focus on nursing students at a single institution may not provide a comprehensive view of practices and knowledge across different regions or types of healthcare training institutions.

This discussion underscores the necessity for comprehensive strategies in healthcare education that enhance the practical application of knowledge and foster a proactive approach to health management among future healthcare professionals.

CONCLUSION

This study has shown that while nursing students possess substantial knowledge about Breast Self-Examination (BSE), there is a significant gap between their knowledge and the actual practice of BSE. This discrepancy in practice could potentially compromise the effectiveness of breast cancer screening programs and delay the early detection of this condition. Therefore, it underscores the need for targeted educational interventions that not only reinforce the importance of BSE but also address the barriers to its regular practice among nursing professionals.

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