ASSESSMENT OF KNOWLEDGE REGARDING BREAST SELF EXAMINATION AMONG NURSING STUDENTS IN TERTIARY CARE SETTING

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Abstract: *Breast cancer is the leading cause of cancer-related morbidity and mortality among women worldwide, with a high prevalence in Pakistan. Breast Self-Examination (BSE) is a cost-effective tool for early detection, yet awareness and practices remain suboptimal in low-resource settings.* **Objective:** *This study assesses the knowledge and practices of nursing students regarding BSE in a tertiary care setting in Pakistan.* **Methods:** *A descriptive cross-sectional study was conducted among 160 nursing students at a tertiary care hospital in Lahore, Pakistan. Convenience sampling was used, and data were collected using a structured questionnaire. The instrument assessed demographic characteristics, awareness of breast cancer and BSE, and practices related to its frequency and technique. Data were analyzed using SPSS version 26, with descriptive and inferential statistics applied.* **Results:** *The study revealed that 87.5% of participants were aware of breast cancer prevalence, and 81.25% had heard of BSE. Most participants (62.5%) correctly identified the recommended monthly frequency for performing BSE, and 81.25% demonstrated knowledge of the correct technique. Informal sources, such as home (31.25%) and TV/radio (25.0%), were the primary channels for BSE knowledge. Significant gaps in formal education and technical accuracy were identified, particularly among junior students.* **Conclusion:** *Although nursing students demonstrated a relatively high awareness of BSE, deficiencies in formal training and technical knowledge underscore the need for enhanced breast health education in nursing curricula. Addressing these gaps through structured educational interventions can improve BSE practices and empower nursing students as agents of change in promoting breast cancer awareness in Pakistan.*

Keywords: Breast self-examination, Nursing students, Breast cancer awareness, Tertiary care, Pakistan, Early detection.

Introduction

Breast cancer is one of the leading causes of morbidity and mortality among women globally, including in Pakistan. According to the World Health Organization (WHO), breast cancer accounts for 2.3 million new cases annually, making it the most frequently diagnosed cancer in women (1). In Pakistan, the incidence of breast cancer is alarmingly high, with late diagnoses contributing significantly to poor outcomes (2). Cultural stigma, lack of awareness, and limited access to healthcare facilities exacerbate the challenges associated with early detection and timely treatment (3).

Breast Self-Examination (BSE) is a simple, cost-effective method for the early detection of breast cancer and is particularly valuable in resource-limited settings like Pakistan (4). Studies have shown that regular BSE practice can significantly increase the likelihood of identifying abnormal changes early, thereby improving prognosis and survival rates (5). However, the adoption of BSE practices remains low in Pakistan due to limited awareness and misconceptions regarding breast cancer screening (6).

Nursing students, as future healthcare providers, play a critical role in advocating for breast health awareness and promoting early detection practices. Their knowledge and attitudes toward BSE are pivotal in shaping community-level interventions and educating patients (7). Despite this, research assessing the knowledge and practice of BSE among nursing students in Pakistan is scarce. Understanding their level of awareness can help identify gaps in education and inform targeted interventions (8).
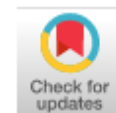
This study aims to evaluate the knowledge of nursing students regarding BSE in a tertiary care setting in Pakistan. By identifying strengths and weaknesses in their understanding, this research seeks to highlight the need for incorporating comprehensive breast health education into nursing curricula. This approach will empower nursing students to become effective advocates for breast cancer prevention and early detection in their communities.

Methodology

This study employed a descriptive cross-sectional design to evaluate the knowledge regarding Breast Self-Examination (BSE) among nursing students in a tertiary care setting. The research was conducted at Sir Ganga Ram Hospital, Lahore, over a two-month period. The population included nursing students enrolled in various academic years at the institution. A sample size of 160 students was calculated using Yamane's formula, ensuring a 95% confidence level and a 5% margin of error. Participants were selected through convenience sampling, targeting those who met the inclusion criteria and provided informed consent.

The inclusion criteria encompassed nursing students from the 1st, 2nd, 3rd, and 4th academic years, with varying levels of knowledge regarding BSE. Students who had received prior formal training in BSE or were unwilling to participate were excluded from the study. A structured questionnaire, designed and validated for this study, was used to collect data. The questionnaire comprised two sections: demographic information, including age, place of

residence, and academic year, and knowledge assessment items, focusing on awareness, practices, and techniques of BSE.

The questionnaires were distributed during academic sessions and clinical rotations, with participants receiving a detailed explanation of the study's purpose. Confidentiality was ensured throughout the data collection process, and completed questionnaires were retrieved on-site to maintain data integrity.

Ethical approval for the study was obtained from the institutional review board of the tertiary care hospital. Informed consent was acquired from all participants, and anonymity was preserved to protect their privacy. Data analysis was performed using SPSS version 26. Descriptive statistics, including frequencies and percentages, were calculated to summarize the demographic characteristics and knowledge levels of participants. Inferential statistics, such as chi-square tests, were used to explore associations

between demographic variables and BSE knowledge. Reliability of the questionnaire was assessed using Cronbach's Alpha, while sampling adequacy was verified through the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test of Sphericity.

This methodology ensured a comprehensive assessment of nursing students' knowledge regarding BSE, providing valuable insights into educational needs and potential areas for intervention.

Results

The demographic profile of the 160 nursing students is summarized in Table 1. Most participants were above 22 years of age (83.8%) and resided in urban areas (67.5%). The majority reported experiencing menarche before the age of 15 (65.6%).

Table 1: Demographic Characteristics of Participants

Variable	Category	Frequency (n)	Percentage (%)
Age	≤22	26	16.3
	>22	134	83.8
Residence	Rural	30	18.8
	Suburban	22	13.8
	Urban	108	67.5
Menarche Age	<15 years	105	65.6
	≥15 years	55	34.4
Total		160	100.0

Most participants were aware of breast cancer prevalence (87.5%) and had heard of Breast Self-Examination (BSE)

(81.25%). Home (31.25%) and TV/radio (25.0%) were the primary sources of information. (Table 2)

Table 2: Awareness of Breast Cancer and BSE

Variable	Category	Frequency (n)	Percentage (%)
Awareness of Breast Cancer Prevalence	Yes	140	87.5
	No	20	12.5
Heard of BSE	Yes	130	81.25
	No	30	18.75
Sources of Information	Home	50	31.25
	TV/Radio	40	25.0
	Newspaper	20	12.5
	Peer Group	30	18.75
	Mobile	20	12.5

Participants displayed varied knowledge and practices regarding the method, frequency, and location for performing BSE. Most participants (62.5%) correctly

identified monthly self-examination as the recommended frequency, while 81.25% used the correct technique (palm and three fingers). (Table 3)

Table 3: Practices and Techniques of BSE

Variable	Category	Frequency (n)	Percentage (%)
Frequency of BSE	Daily	10	6.25
	Weekly	20	12.5
	Monthly	100	62.5
	Yearly	30	18.75
Method of BSE	One finger	20	12.5
	Palm and three fingers	130	81.25
	Don't know	10	6.25
Location for BSE	Mirror	120	75.0

	Lying on bed	30	18.75
	Bathroom	10	6.25

The study demonstrated strong internal reliability (Cronbach's Alpha = 0.78) and sampling adequacy (KMO = 0.82). Bartlett's Test of Sphericity was significant (χ^2 = 689.25, $p < 0.001$), confirming the suitability of the data for further analysis. (Table 4)

Table 4: Statistical Measures

Measure	Value
Cronbach's Alpha	0.78 (good)
KMO Measure	0.82 (good)
Bartlett's Test of Sphericity	χ^2 = 689.25, $p < 0.001$

Discussion

The study assessed the knowledge and practices regarding Breast Self-Examination (BSE) among nursing students in a tertiary care setting in Lahore, Pakistan. The findings revealed a high level of awareness regarding breast cancer prevalence (87.5%) and a substantial understanding of BSE (81.25%). Most students were informed about BSE through informal channels, such as home (31.25%) and TV/radio (25.0%), while formal training appeared to be lacking. Additionally, the majority of participants (62.5%) identified the correct frequency of performing BSE as monthly, and 81.25% were aware of the proper technique using the palm and fingers. These findings highlight strengths in basic awareness but reveal gaps in formal education and technical accuracy in performing BSE.

Comparing these results with previous studies, a 2020 study conducted in Karachi reported that only 65% of women were aware of BSE, and an even smaller proportion practiced it regularly (9). This suggests that nursing students, given their educational background, may have higher awareness compared to the general population. However, a study in Nigeria found that 78.3% of nursing students had adequate knowledge about BSE, with formal education playing a pivotal role in this awareness (10). This reinforces the importance of integrating structured BSE education into nursing curricula in Pakistan to bridge knowledge gaps.

Globally, a study conducted in Ghana found that only 40.5% of women practiced BSE regularly, citing barriers such as lack of knowledge and misconceptions (11). Similarly, cultural and social stigmas in Pakistan may also limit BSE practices, as suggested by Saeed et al., who emphasized the role of cultural norms in breast cancer awareness (3). The predominance of informal knowledge sources in the present study further supports this notion, indicating the need for institutional efforts to promote accurate, evidence-based education on BSE.

While 87.5% of participants in the current study correctly identified the recommended age to start BSE as 19 years or older, this is higher than findings from a 2021 study in Turkey, where only 72% of nursing students were aware of the correct age (12). The discrepancy could be attributed to cultural and regional variations in health education. However, gaps remain in technical knowledge, as 12.5% of participants in this study incorrectly reported the use of a single finger for palpation. This mirrors findings from a study in Saudi Arabia, where 15% of nursing students reported similar inaccuracies in technique (13).

The role of nursing education in improving BSE awareness and practices cannot be overstated. This study aligns with findings from Rehman et al., who concluded that structured educational programs significantly enhance BSE knowledge and practices among nursing students in low-resource settings like Pakistan (5). Furthermore, the high awareness levels observed in senior students (3rd and 4th years) suggest that experience and exposure to clinical training positively influence knowledge levels. This aligns with the findings of Azhar et al., who reported that advanced academic years correlate with improved BSE knowledge (4).

Overall, the findings underscore the need for a comprehensive approach to BSE education, emphasizing both theoretical knowledge and practical skills. Incorporating interactive teaching methods, such as simulation-based learning and peer-led workshops, could further enhance nursing students' competency in promoting breast health awareness. Future research should explore the impact of targeted educational interventions on improving the knowledge and practices of BSE among nursing students across different regions of Pakistan.

Conclusion

This study highlights a high level of awareness regarding breast cancer prevalence and Breast Self-Examination (BSE) among nursing students in a tertiary care setting in Pakistan. While most participants demonstrated basic knowledge of BSE techniques and the recommended frequency, gaps remain in formal training and technical accuracy. The findings emphasize the urgent need to integrate structured breast health education into nursing curricula to bridge these gaps and empower nursing students as advocates for early detection. Targeted educational interventions and practical training are critical to improving BSE practices and addressing cultural and systemic barriers to breast cancer awareness in Pakistan.

Declarations

Data Availability statement
All data generated or analyzed during the study are included in the manuscript.
Ethics approval and consent to participate.
Approved by the department Concerned. (IRBEC-09132/23)SNU
Consent for publication
Approved

Conflict of interest

The authors declared an absence of conflict of interest.

Authors Contribution

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