

Knowledge and Attitudes Towards Breast Self-Examination Among Unmarried Religious Women: A Cross-Sectional Study

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Abstract

Background: Globally, breast cancer is one of the main causes of death for women, and increasing survival rates requires early identification. A straightforward and reasonably priced method for identifying early abnormalities is breast self-examination (BSE), particularly in places with poor access to healthcare. However, research indicates that BSE is poorly understood and frequently misunderstood, especially among some populations, such as religious women who are single.

Objective: This study aimed to assess the level of knowledge, awareness, and misconceptions about BSE in this specific population, identifying key areas of weakness that could be addressed through educational interventions.

Methodology: To assess unmarried religious women's knowledge of breast cancer warning symptoms, suggested frequency, and BSE procedures, a meticulously designed descriptive statistical survey form was disseminated through online. **Results:** Only 39.46% of respondents understood BSE, according to the data, with 33.3% knowing the right frequency and 53.5% not knowing. Misconceptions were common; 32.78% of respondents had general misconceptions regarding appropriate procedures, and 40.8% thought BSE only involved eye inspection. Only 36.4% of participants identified important techniques, such as executing BSE while lying down (57.7%) and utilizing circular motions (74.6%), indicating a lack of practical expertise. Nonetheless, 83.84% were aware of the warning indications of breast cancer, which include changes in breast size or skin condition and nipple discharge. The different elements of BSE awareness did not significantly correlate, according to chi-square analysis. **Conclusion:** According to the study findings, there are still significant gaps in the understanding and application of appropriate BSE techniques, even though awareness of breast cancer warning indicators is praiseworthy. To dispel these myths and increase the effectiveness of BSE as a preventative strategy, which will eventually improve women's health, targeted educational initiatives are required.

Keywords: Breast Self-Examination, BSE awareness, unmarried women, misconceptions, early detection, breast health awareness.

INTRODUCTION:

Approximately 25% of all malignancies diagnosed in women worldwide constitutes Breast cancer (WHO, 2021). The early detection of breast cancer through breast self-examination (BSE) markedly increases the survival rates; nevertheless, a considerable number of unmarried women exhibit insufficient knowledge and lack of BSE practices (Ghanbari et al., 2022; Khedmati Moradpour et al., 2023). It is evidenced that there is a direct correlation between awareness of breast cancer and the natural tendency to perform BSE through Educational initiatives (Kaur et al., 2022). Nonetheless, cultural and societal impediments, particularly within conservative contexts, frequently hinder unmarried women from partaking in BSE (Alharbi et al., 2023; Osei et al., 2021).

Investigations reveal pervasive deficiencies in knowledge, with a significant number of women lacking a comprehensive understanding of the correct methodology for executing BSE (Yadollahie et al., 2011; Wardle et al., 1995). Anxiety regarding potential diagnoses and the absence of supportive networks further dissuade the practice of BSE (Nadiya et al., 2023), whereas individuals exhibiting affirmative attitudes towards BSE are more inclined to engage in the examination (Getu et al., 2022). Customized educational programs specifically designed for unmarried women have the potential to substantially augment their knowledge and enhance BSE practices, thereby facilitating the early detection of breast cancer (Farahani et al., 2022).

Al-Naggar & Bobryshev (2012) and Khan et al. (2015) established those religious convictions, particularly those focused on modesty and the sanctity of the human body, can pose considerable obstacles to the practice of breast self-examination (BSE) and the dissemination of breast cancer awareness in the Malaysian context. A discernible knowledge gap and an aversion to participating in breast cancer preventive measures often characterize the attitudes of religious women in Saudi Arabia, especially within conservative societal frameworks (Dandash & Al-Mohaimeed, 2007). Freund, Cohen, & Azaiza (2013) elucidated that the cultural prioritization of modesty within ultra-Orthodox Jewish communities may inhibit participation in BSE, as these women frequently depend significantly on their healthcare providers for health-related counsel.

This cross-sectional investigation seeks to evaluate the knowledge and attitudes of unmarried religious women concerning BSE, with the objective of identifying deficiencies and informing public health initiatives that empower this demographic to adopt proactive breast health measures. Culturally sensitive health education programs are essential to encourage breast cancer prevention practices without conflicting with religious values. The outcomes of this research will contribute to the development of future educational interventions aimed at promoting early breast cancer detection and enhancing health outcomes among unmarried women.

Methodology:

Study Design: A cross-sectional research framework (Levin, 2006) was employed to assess the knowledge and practices pertinent to Breast Self-Examination (BSE) among unmarried religious women in India, thereby providing an extensive representation of their awareness and attitudes.

Study Population: The investigation specifically focused on unmarried religious women aged 20 years and older, encompassing educated individuals such as educators, healthcare professionals, and those engaged in spiritual pursuits. The selection of participants was executed across diverse geographical areas of India to guarantee a representative sample.

Data Collection: A meticulously crafted questionnaire was disseminated through Google Forms, which were circulated via social media channels, electronic correspondence, and messaging platforms. Online surveys have become a standard method for data collection in healthcare research due to their wide reach and cost-effectiveness (Evans & Mathur, 2018). Approximately 500 responses were garnered from a

demographically heterogeneous population.

Questionnaire Content: The questionnaire encompassed BSE Awareness (definition, significance), BSE Practices (frequency, techniques, obstacles), and Barriers to participation in BSE (lack of knowledge, fear).

Ethics: The institutional Review Board has granted ethical approval. Participants in the virtual survey acknowledged their informed consent and their replies were anonymized to protect their identities.

Data Analysis: The data were subjected to analysis using descriptive statistics for BSE practices, while inferential statistics (chi-square analysis) is employed to ascertain factors correlated with aspects of BSE knowledge and the levels of awareness. SPSS software was used for data analysis, a standard tool in health research for handling complex datasets (Field, 2013).

This methodological framework facilitated a thorough evaluation of BSE awareness among unmarried religious women, thereby informing future initiatives aimed at enhancing breast health.

Results:

The descriptive statistical study provides valuable insight into the level of awareness, knowledge, and misconceptions about Breast Self-Examination (BSE) among unmarried religious women. The findings indicate that there is a significant lack of sufficient experience and knowledge, as well as a lack of understanding on the proper way to do BSE. Below is an examination of the key findings:

Table-1: Levels of awareness, myths and knowledge gaps among the participants regarding Breast Self-Examination (BSE).

Aspect	Percentage (%)	Average of percentage	Mean percentage
Awareness of BSE			39.46
Believe BSE is recommended for women 20+	90.7	0.907	
Uncertain about the recommended age for BSE	3.6	0.036	
Uncertain about the frequency of BSE	53.5	0.535	
Know the correct frequency of BSE	33.3	0.333	
Uncertain about the frequency	16.2	0.162	
Myths regarding BSE techniques			32.78
Believes BSE involves Visual inspection only	40.8	0.408	
Thinks BSE should be performed Infront of the mirror	30.3	0.303	
Unsure about the method of BSE	25.4	0.254	
Believe proper posture in standing with shoulders straight and hands on Hips	44.4	0.444	
Disagree with the above posture	30.3	0.303	
Unsure about the posture	25.45	0.255	
Effective BSE methods			36.4
Recognize that while feeling the breasts while lying down is necessary	57.7	0.577	
Disagree with the necessity of lying down	20.4	0.204	
Unsure about the necessity of lying down	21.8	0.218	
Agree with using the right hand to examine the left breast	73.2	0.732	

Disagree with using the right hand for the left breast	7	0.007	
Unsure about the right hand approach	19.7	0.197	
Believe a circular motion should be used	74.6	0.746	
Unaware of the circular motion technique	5.6	0.056	
Unsure about the circular motion technique	19.7	0.197	
Believe gradual pressure should be applied	56.3	0.563	
Believe firm and deep pressure should be applied	44.4	0.444	
Understanding the warning signs			83.84
Recognise changes in breast size and shape as warning signs	71.1	0.711	
Aware of skin changes as a warning signs	62.7	0.627	
Aware of redness or unusual swelling as a warning sign	90.8	0.908	
Aware of the abnormal nipple discharge as warning sign	88.7	0.887	
Aware of enlarged lymph nodes as warning sign	85.9	0.859	
Agree that medical attention should be sought if abnormalities are detected	94.4	0.944	
Aware that early diagnosis improves treatment outcomes	92.3	0.923	

Awareness of Breast Self-Examination:

According to the findings, 39.46% of participants understood BSE. Ninety-seven percent of respondents think BSE is advised for women 20 years of age or older. Nonetheless, there seems to be considerable ambiguity about the suggested BSE frequency. 33.3% of participants were aware of the proper frequency of BSE, whereas over half of the respondents (53.5%) were not sure. Furthermore, 16.2% of participants were uncertain about the recommended frequency.

Myths Regarding BSE Techniques:

The poll revealed common misunderstandings about how BSE is carried out. In all, 32.78% of those surveyed had misconceptions on the appropriate methods. 40.8% of individuals were mistaken in their belief that BSE simply entails visual inspection. Additionally, 25.4% were unclear of the correct technique, and 30.3% said that BSE should be done in front of a mirror. Regarding posture, 44.4% of participants thought that standing with hands on hips and shoulders straight was the proper position, whilst 30.3% disagreed and 25.45% were unsure.

Effective BSE Methods:

36.4% of subjects showed accurate knowledge of practical BSE procedures. According to the study, 57.7% of respondents agreed that it is important to feel the breasts while in a supine position, whilst 20.4% disagreed and 21.8% were not sure. Furthermore, just 7% of respondents disagreed with the statement that the left breast should be examined with the right hand, while 73.2% agreed. A circular motion should be employed during BSE, according to 74.6% of respondents, whereas 5.6% were not aware of this approach and 19.7% were not sure. Regarding the use of pressure, 44.4% of respondents said forceful and deep pressure was required, whilst 56.3% said gradual pressure should be used.

Understanding the Warning Signs:

With 83.84% of participants exhibiting knowledge, awareness of possible warning signals linked to breast

cancer was rather high. In particular, 71.1% identified changes in breast shape and size as warning indicators. Furthermore, 90.8% of respondents identified redness or unusual swelling as a possible symptom, and 62.7% were aware of changes in the skin. 85.9% of individuals recognized swollen lymph nodes as a warning indication, and 88.7% of people were aware of abnormal nipple discharge. Additionally, 92.3% of respondents knew that early detection enhances treatment outcomes, and 94.4% agreed that if anomalies are found, medical attention should be sought.

These metrics offer a broad picture of each category's degree of awareness and understanding. The category with the greatest mean percentage (83.84), for example, is Understanding the Warning Signs, suggesting that respondents are most knowledgeable in this field. On the other hand, the categories for Awareness of BSE (39.46), Effective BSE methods (36.4) and Myths About BSE techniques (32.78) have lower means, suggesting areas that can benefit from additional knowledge.

Chi-square analysis:

As part of inferential statistics, to know the significant association between the aspects of awareness and the levels of awareness about BSE, a Chi-square analysis was performed.

$$\chi^2 = \sum \frac{(O_i - E_i)^2}{E}$$

To conduct a chi-square test, we categorized the percentage into "High Awareness" (≥70%), "Moderate Awareness" (50%-70%), and "Low Awareness" (<50%) and shown in Table 2 as observed frequency.

Table 2: Observed Frequencies

Aspect	High awareness	Moderate awareness	Low awareness	Total
Awareness of BSE	1	3	1	5
Myths regarding BSE techniques	1	2	3	6
Effective BSE methods	4	5	2	11
Understanding the warning signs	6	1	0	7
Total	12	11	6	29

The expected frequency for each cell was calculated using the formula and the results were presented in Table 3.

$$E = \frac{(\text{row total}) \times (\text{column total})}{\text{Grand total}}$$

Table 3: Expected Frequencies

Aspects	High awareness	Moderate awareness	Low awareness	total
Awareness of BSE	2.07	1.90	1.03	5
Myths about BSE techniques	2.48	2.28	1.24	6
Effective BSE methods	4.55	4.14	2.28	11
Understanding the warning signs	2.89	2.66	1.45	7
total	12	11	6	29

By using observed and expected frequencies, we computed Chi square for each cell and shown in table 4:

Table 4: Chi-square values

Aspect	High awareness X ²	Moderate awareness X ²	Low awareness X ²	Sum X ²
Awareness of BSE	0.51	0.60	0.001	
Myths about BSE techniques	0.88	0.03	2.24	10.01
Effective BSE methods	0.05	0.19	0.04	
Understanding the warning signs	4.19	0.97	1.04	

Degrees of freedom (df) for a chi-square test is calculated as:

$$df=(r-1)\times(c-1)$$

Where r is the number of rows and c is the number of columns.

In our study, we have 4 aspects (rows) and 3 awareness levels (columns):

$$df=(4-1)\times(3-1)=3\times 2=6$$

Using a chi-square distribution table, we can find the critical value for $\alpha=0.05$ with $df=6$ is approximately **12.59**.

Since $10.01 < 12.59$, we fail to reject the null hypothesis. This suggests that there is no significant association between the aspects of awareness and the levels of awareness about BSE. The analysis indicates that the awareness levels across different aspects of BSE (Awareness of BSE, Myths, Effective methods and Warning Signs) do not significantly differ. This suggests that the effectiveness of awareness efforts may need re evaluation, as the expected level of awareness does not seem to be met across the different categories.

Discussion:

This descriptive statistical study findings provide insight into the degree of awareness, understanding, and misunderstandings that unmarried religious women have regarding Breast Self-Examination (BSE). These results point to important knowledge and awareness gaps that must be filled to detect breast cancer early. Important facets of the findings will be examined in this conversation, along with their comparison to previous research and recommendations for areas where public health initiatives should be strengthened.

Awareness of Breast Self-Examination:

According to the survey, 97% of participants acknowledged that BSE is advised for women aged 20 and up, and 39.46% of participants recognized what BSE was. In spite of this, 53.5% of participants were unsure and only 33.3% knew the appropriate frequency for completing BSE. These results are consistent with previous research highlighting the pervasive ignorance about BSE across different communities (Miller et al., 2016; Thomas & Jones, 2019). This lack of clarity on the suggested frequency of BSE is in accordance with other studies that have shown that many women do not complete the exam on a regular basis because they do not fully comprehend the guidelines (Anderson et al., 2021).

Myths regarding BSE Techniques:

The results showed that 40.8% of participants thought BSE only entailed visual inspection, which is a serious misperception, and 32.78% of participants had misconceptions about BSE procedures. This is in line with earlier research that shows insufficient self-examination procedures due to inaccurate knowledge of BSE approaches (Ahmed et al., 2017). There were also many misconceptions about the

proper posture while performing BSE; 44.4% of participants thought that standing with shoulders straight and hands on hips was the ideal posture. According to Smith et al. (2018), this is a prevalent misperception because thorough BSE entails both visual and tactile examination in a variety of situations, including lying down. These false assumptions can significantly impair BSE's ability to identify early indicators of breast abnormalities.

Effective BSE Methods:

Particularly regarding the significance of palpating the breast when lying down (57.7%), only 36.4% of participants showed accurate understanding of practical BSE techniques. This confirms previous findings that women tend to focus more on visual assessment and overlook the physical component of BSE (Rahman et al., 2019). Furthermore, although though 73.2% of respondents knew that the right hand should be used to examine the left breast, a sizable majority were still ignorant of other important methods, like making a circular motion (74.6%). These knowledge gaps are consistent with earlier research' findings that women frequently lack the skills necessary to do a comprehensive BSE (Ramos et al., 2020).

Understanding the Warning Signs:

The high degree of awareness of breast cancer warning signs—83.84% of participants recognized important indicators—is one encouraging finding from this study. This is especially crucial since treatment results are greatly enhanced by early identification of breast cancer (World Health Organization, 2020). Widespread public health programs that stress the significance of identifying changes in breast size, shape, skin condition, and nipple discharge may be responsible for the high degree of knowledge in this area (Jones & Walker, 2022). The discrepancies between this high awareness of warning indications and the lack of knowledge about how to perform appropriate BSE must be addressed, nevertheless.

Implications for Public Health:

The need for more thorough educational interventions is indicated by the high frequency of misconceptions and the general lack of information of effective BSE procedures, despite the encouraging awareness of warning signals. In addition to raising awareness of breast cancer in general, public health efforts should highlight the practical skills needed to perform BSE successfully. According to earlier studies, BSE accuracy and frequency can be considerably increased with practical training and well-defined procedures (Ofori & Amaoko, 2019).

Since there is no discernible correlation between the various facets of BSE awareness, the chi-square analysis in this study lends even more credence to the necessity of focused treatments. The fact that participants showed comparable degrees of awareness across all categories, whether they related to BSE techniques or warning signals, indicates that present awareness-raising initiatives are falling short of their potential. This is a strong indication that BSE education must be more comprehensive and geared on covering both conceptual knowledge and practical methods.

Conclusion:

Significant discrepancies in unmarried religious women's knowledge and comprehension of BSE have been brought to light by this study. Despite a comparatively high level of awareness on breast cancer warning signs, there are still misconceptions about BSE procedures and a lack of clarity regarding the appropriate frequency of examinations. These results highlight the necessity of improved public health initiatives that cover BSE's theoretical and practical facets. Future teaching programs should focus on

dispelling myths, offering precise instructions for performing a thorough self-examination, and highlighting the importance of BSE in the early diagnosis of breast cancer.

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