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Original Article

Breast Self-Examination (BSE): Knowledge & Practice among Rural Women in Selected Area in Kishoreganj

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Abstract

Background: *Breast cancer ranks as the most prevalent and lethal cancer affecting women globally, with increasing incidence rates observed in both developed and developing countries, including Bangladesh, where diagnoses often occur at advanced stages. Breast Self-Examination (BSE) is an easy, cost-effective, and accessible approach for early identification, particularly in settings with limited resources. Worldwide initiatives such as the WHO's breast cancer framework and national plans highlight the importance of early detection using BSE to lower mortality rates and enhance survival outcomes.* ***Materials & Methods:*** *A descriptive cross-sectional study was carried out using a purposefully chosen sample of 189 individuals from Mithamoin, Kishoreganj, Bangladesh. The researcher collected data through face-to-face interviews employing a 22-item standardized Breast Self-Examination scale focused on two areas: BSE Knowledge and Practice. Descriptive statistics, including frequency, percentages, means, and standard deviations, were utilized for data analysis.* ***Results:*** *The average age of the participants was 27.78 years, with a significant majority being Muslim (87.30%) and 29.63% lacking any formal education. Most participants (83.06%) were married, and a large portions (74.07%) were housewives, with their average monthly family income being 22142.86 BDT. In this study, a vast majority of the participants demonstrated a poor level of knowledge (95.8%), while only 2.1% exhibited a good level of BSE practice.* ***Conclusion:*** *The research indicated that a majority of women lacked adequate understanding of Breast Self-Examination (BSE), including how to perform it, its significance, and the appropriate timing, with only a handful engaging in it on a regular basis. There is a pressing necessity to improve awareness and the practice of BSE to facilitate the early identification and prevention of breast cancer.*

Key words: *Breast Self-Examination (BSE), Incidence, Prevalent, Frame work, Worldwide*

Introduction: Breast cancer poses a significant and life-threatening challenge to public health. The rate of this disease has consistently risen in both developed and developing nations[1]. It is the most prevalent cancer among women, with the likelihood of developing it increasing as one ages[2]. In 2020, estimates indicated that the worldwide cancer diagnosis rate had reached 19.3 million new cases and resulted in 10 million deaths[3]. In terms of incidence, the three most prevalent types of cancer are lung, colorectal, and female breast cancer, which rank among the top five in mortality (first, second, and fifth, respectively). These three cancer types represent one-third of all cancer cases and deaths around the globe[4].

Breast cancer is the most prevalent cancer in women worldwide, accounting for 24.2% of all cancer diagnoses. It is the most commonly diagnosed cancer in 154 out of 185 countries and remains the leading cause of cancer-related mortality in women, responsible for 15% of deaths[4]. In Bangladesh, the exact incidence of breast cancer is unclear due to the absence of a national cancer registry. However, the Global Cancer Observatory estimates a 5-year breast cancer incidence rate of 38.35 per 100,000 people,

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with breast cancer accounting for 8.3% of the 156,775 new cancer cases reported in 2020[5]. The World Health Organization (WHO) has launched a global breast cancer initiative with the goal of saving around three million lives by 2040. The initiative emphasizes health promotion strategies to ensure early detection, prompt diagnosis, and proper treatment for breast cancer[6]. Secondary prevention, which involves early detection methods, is the most effective approach to reducing breast cancer mortality[7]. Key screening methods such as Breast Self- Examination (BSE), Clinical Breast Examination (CBE), and mammography are widely accessible and recommended for identifying breast cancer in its early stages. Numerous randomized studies have confirmed the effectiveness of mammography screening in detecting breast cancer[8]. However, mammography is costly and requires considerable financial and human resources, making routine screenings challenging and often unavailable in developing countries. In contrast, BSE is a simple, low-cost, and non-invasive method that can be performed privately at home, making it an accessible and safe option for early detection[7].

In Bangladesh and other low-income countries, breast cancer is often diagnosed at a late stage, leading to poor outcomes. In contrast, breast cancer mortality rates in Western countries have been decreasing due to early detection through screening and improved treatment methods [9,10]. Breast cancer screening plays a crucial role in reducing mortality associated with the disease[11]. A recent study has shown that breast cancer is increasingly affecting younger age groups in Bangladesh compared to Western nations, with the disease proving to be more aggressive during the reproductive years. This highlights the urgent need to modify early detection strategies and adapt prevention and treatment approaches to better address the specific challenges faced in these regions[12].

Breast cancer is feared not only for its potential to be fatal but also because it can significantly impact a woman's sense of self, sexuality, and femininity. Additionally, breast cancer remains a taboo subject, often not openly discussed, and its documentation in rural populations is frequently neglected [6].

The American Cancer Society recommends that women perform Breast Self-Examination (BSE) to become familiar with the normal feel of their breasts and promptly report any abnormalities to health care professionals[13]. In Bangladesh, the 'National Cancer Control Strategy and Plan of Action 2009-15' encourages the use of Clinical Breast Examination (CBE) and BSE as early detection tools to reduce the disease's progression and improve survival rates[14]. The Breast Health Global Initiative (BHGI) also advocates for BSE as the first step in breast cancer prevention for low- and middle-income countries[15].

However, according to a knowledge assessment conducted in Bangladesh, women's awareness and practice of BSE are insufficient. Without proper knowledge, self-examination becomes impractical. Therefore, the aim of this study is to assess the understanding and practice of BSE as an early detection method for breast cancer.

Material & Methods

A cross-sectional study was conducted from November to December 2024 among rural women in the Mithamoiin Upazila, Kishoreganj District, Dhaka, Bangladesh. A total of 189 women aged 20 to 45 participated in the study. Both the study location and participants were purposively selected. Data collection was done through face-to-face interviews using a predesigned, pretested semi- structured questionnaire, which took approximately 15-20 minutes to complete. Informed consent was obtained from all participants prior to the interview, and privacy and confidentiality were maintained throughout the study. Participation was voluntary, and participants had the right to withdraw or refuse at any time without facing any consequences. Women who had been diagnosed with cancer or were pregnant were excluded from the study. Breast Self-Examination (BSE) was assessed using a three-part questionnaire: (1) Socio-demographic Characteristics Questionnaire, (2) BSE Knowledge Scale, and (3) BSE Practice Scale.

Socio-demographic Characteristics Questionnaire: This questionnaire was developed based on a literature review and included seven items, covering age, religion, marital status, education, occupation, monthly income, and family history of breast cancer.

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BSE Knowledge Scale: The BSE Knowledge Scale consisted of 15 items designed to assess the participants' knowledge of breast self-examination. For each correct response, a score of '2' was given, for 'don't know' a score of '1' was assigned, and for incorrect responses, a score of '0' was applied. Negative questions were reverse coded. The knowledge level was categorized using Bloom's classification: a score below 60% indicated poor knowledge, while scores between 60% and 100% indicated positive knowledge. This was further divided into two categories: 60-86% for satisfactory knowledge and 86-100% for good knowledge.

BSE Practice Scale: The BSE Practice Scale consisted of seven items to evaluate the participants' practice of breast self-examination. Responses were recorded on a Liker t scale with options such as "never," "seldom," "neutral," "frequently," and "always." A scoring system of 0, 1, 2, 3, and 4 was applied for each response, respectively. The level of practice was scored out of a total of 28 points. A score of 15-28 indicated good practice; while a score of 0-14 indicated poor practice. Data analysis was performed using a scientific calculator after entering the data into a master sheet. Quantitative variables were analyzed using mean scores, while qualitative variables were summarized using percentages.

Results

Socio-Demographic Characteristics and Disease Related Characteristics of Participants

Total 189 participants were recruited for this study. The mean age of the participants was 27.78 years (SD= 7.2) with the range of 15 - 45 years of age. Most of them were Muslim (87.30%) by their religion. Only 10.05% participants had above higher secondary school education and 29.63% of them had no formal education. Majority (83.06%) of the participants were married. Most of participants (74.07%) were housewife and their mean monthly family income was 22142.86 BDT. Among all participants only 5.82% had history of breast cancer in their family (Table 1).

Breast Self-Examination Knowledge of Participants

Table 2 showed the findings that among all participants most of them 174 (92%) did not know about the duration of BSE and only 8 (4.1%) had aware about the exact time of BSE procedure. More than 90% women did not know about the position, techniques and methods of BSE (item no. 3 to 11). On the other hand, only 55 (29.1%) participants reported that during BSE need to press on the nipple to check any unusual discharge from the breast. Majority of the women 173 (91.3%) reported that they 'need to observe any unusual change in the shape and size of the breast'. Although most of the participants 161 (85.5%) were aware about 'the retraction of the nipple is a warning sign that should be observed' but only 88 (46.5%) of the women knew about the statement of "lump is the early sign for cancer".

Breast Self-Examination Practice of Participants

Table 3 showed the findings that among all of the participants only 11 (6.4%) were practiced BSE once in a month, among them only 3 (1.7%) were practiced always BSE in a month. Majority 182 (95.9%) of the participants never learnt the correct method of BSE and 174 (91.9%) never discussed the importance of BSE with friends. Most 187 (98.8%) of the women never got advice from parents, partner to do BSE. But among them only 3 (1.7%) participants were indicated that they had been taught on BSE by health staff. About 110 (58.2%) of the women never went to public health care directly, if notice any breast abnormality.

Level of Breast Self-Examination Knowledge and Practice of Participants

The result showed that among all participant's majority of the participants had poor level of knowledge (95.8%) and only 2.1% participants had good level of BSE practice (Table 4).

Table1: The Distribution of Socio-Demographic Characteristics and Disease Related Characteristics of the Participants (n=189)

Variable	Category	Frequency	Percentage
Age	15 – 24	67	35.45%
	25 – 34	89	47.09%
	35 – 45	33	17.46%
Religion	Muslim	165	87.30%
	Hindu	24	12.70%
Marital status	Married	157	83.06%
	Unmarried	23	12.17%
	Widowed	9	4.76%
Education	Illiterate	56	29.63%
	Primary	73	38.63%
	SSC	41	21.71%
	HSC	19	10.05%
Occupation	Housewife	140	74.07%
	Private job	25	13.21%
	Govt. job	7	3.70%
	Student	17	8.99%

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Income	< 20000 BDT	98	51.85%
	20001 to 40000 BDT	69	36.51%
	40001 to 60000 BDT	20	10.58%
	>60000 BDT	02	1.06%
Family History Breastcancer	Yes	11	5.82%
	No	178	94.18%
	Total	**189**	**100.0%**

Table 2: Breast Self-Examination Knowledge of Participants (n=189)

Items	True response	
	n	%
BSE should be done every 2 months	15	8%
BSE must be done between days 7 until 10 after menses	8	4.1%
BSE should be done in front of the mirror	9	4.7%
Undress until the waist when doing the BSE	7	3.5%
Hands should be raised up alternately above the head when doing the BSE in front of the mirror	2	1.2%
BSE should be done from the front view only	18	9.3%
BSE can be done in a supine position	18	9.3%
Palpate in the right breast while left-sided lying when doing the BSE	4	2.3%
Use finger pulps to examine any lumps of the skin	7	3.5%
BSE can be done using the vertical strip and circular technique	8	4.1%
Need to press on the nipple to check for any unusual discharge	55	29.1%
BSE includes arm-pit examination to check for any lump	65	34.3%
Need to observe any unusual change in the shape and size of the breast	173	91.3%
Retraction of the nipple is a warning sign that should be observed	161	85.5%
Lump is the early sign for cancer	88	46.5%

Table 3: Breast Self-Examination Practice of Participants (n=189)|

Item	Never	Seldom	Neutral	Frequently	Always
	n (%)	n (%)	n (%)	n (%)	n (%)
Do BSE once a month	148 (78.5)	29 (15.1)	0	9 (4.7)	3 (1.7)
Learning the correct method of BSE	182 (95.9)	3 (1.7)	0	1 (0.6)	3 (1.7)
Parents or partner advise me to do BSE	187 (98.8)	2 (1.2)	0	0	0
Advise friends to do BSE	182 (95.9)	0	0	4 (2.3)	3 (1.7)
Discuss the importance of BSE with friends	174 (91.9)	3 (1.7)	0	9 (4.7)	3 (1.7)
Have been taught on BSE by health staff	184 (97.1)	2 (1.2)	0	3 (1.7)	0
If notice any breast abnormality, directly go to public health care	2 (14)	84 (44.2)	1 (0.6)	43 (22.7)	35 (18.6)

Table 4: Level of Breast Self-Examination Knowledge and Practice of Participants (n=189)

Variable	Level	Score	n	%
Knowledge	Poor	<60%	181	95.8%
	Satisfactory	60-85%	8	4.2%
	Good	86 -100%	0	0.0%
Practice	Poor	<14	185	97.9%
	Good	14 – 28	4	2.1%
		Total	**189**	**100.0%**

Discussion

The present study involved women with a mean age of 27.78 years, which corresponds to the reproductive age group. This age range offers an opportunity to motivate women to practice Breast Self-Examination (BSE) regularly, enabling them to identify any abnormalities in their breasts as early as possible. A similar observation was reported in studies conducted in Bangladesh[16] and Nepal[17], though it was more pronounced in India[18]. The current study found that most participants were Muslim, married, and over three-quarters had at least a primary education. These findings are comparable to a study conducted by Khatun (2023) in Bangladesh[16]. Regarding disease-related characteristics, very few participants had a family history of breast cancer, which aligns with other studies in Bangladesh [16,19].

The findings of this study indicate that most women in the reproductive age group had poor knowledge of BSE. Only 4.2% demonstrated satisfactory knowledge of BSE, which is consistent with similar studies in Bangladesh[16]. The majority of the participants had poor knowledge of BSE, which is comparable to studies conducted among Pakistani [20], Indian[21], and Malaysian women[22], where the percentages of poor knowledge were 80.7%, 61.6%, and 69.11%, respectively. A study in India[23] showed that slightly more than half (58.42%) of the subjects had average knowledge and awareness, while 17.62% had poor knowledge. Another study found that 35% of participants were aware of BSE[24]. The low mean knowledge score in this study may be attributed to the participants' educational background, as few had a medical science background, and very few had tertiary-level education.

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Poor knowledge was also linked to a lack of understanding regarding the methods, positions, techniques of BSE, and the appropriate time to perform it. Similar findings were reported among Malaysian women, who also demonstrated poor knowledge of identifying breast lumps as early signs of breast cancer and the methods of early detection [21]. Differences in knowledge across various studies from different countries may be due to variations in the study settings and sociocultural factors.

The practice of BSE reflects the practical application of knowledge about BSE. In this study, only 2.1% of participants practiced BSE. This finding highlights the need for awareness and health education programs to improve the poor practice of BSE and encourage regular practice. The low practice rate may be due to several reasons: participants either never learned the correct method or the importance of BSE, or they received no advice from parents, partners, or friends to perform BSE. Furthermore, health staff did not teach BSE, which is supported by findings from various studies in different countries[20,21,25]. The practice of BSE varies across countries, which could be due to differences in participants' knowledge and the characteristics of the study areas.

Conclusion

The study concludes that most women had poor knowledge and even fewer demonstrated proper BSE practice. While many women agreed that "all women should do BSE," nearly two-thirds felt uncomfortable performing it monthly. A lack of awareness about the procedure, its importance, and the right time to perform BSE contributed to the low practice rate. There is an urgent need to enhance knowledge and encourage regular practice of BSE to aid in the early detection and prevention of breast cancer.

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References

1. Andegiorgish AK, Kidane EA, Gebrezgi MT. Knowledge, attitude, and practice of breast Cancer among nurses in hospitals in Asmara, Eritrea. BMC Nurs. 2018;17(1):1–7.

2. Francies FZ, Hull R, Khanyile R, Dlamini Z. Breast cancer in low-middle income countries: Abnormality in splicing and lack of targeted treatment options. American Journal of Cancer Research. 2020;10(5):1568–1591. http:// www. ncbi. nlm.nih. gov/pubmed/32509398

3. International Agency for Research on Cancer. GLOBOCAN 2020: New Global Cancer Data. 2021. Retrieved from: https:// www.uicc.org/ news/ globocan -2020-new- global- cancer-data.

4. World Health Organization. Latest global cancer data: Cancer burden rises to 18.1 million new cases and 9.6 million cancer deaths in 2018. International Agency for Research on Cancer. World Health Organization. 2018. Retrieved from: http://gco. iarc.fr/.

5. Ishtiak ASM, Ahmed N, Gaffar F, Khan MAS, Yasmeen F. Knowledge, practice and associated factors of breast self-examination among female university students of Bangladesh: Knowledge, practice and associated factors of breast self-examination. Heliyon [Internet]. 2022;8(11): e11780. Available from: https:// doi.org/ 10.1016/j.heliyon.2022.e11780

6. Hanson V, Adejumo O, Van Wyk B. Knowledge and practice of breast self-examination among rural women in South-West Nigeria: Implications for development of women empowerment programme. Afr J Nurs Midwifery. 2017; 19(1):144–56.

7. Nair DCKV, Gopinath DV. Knowledge attitude and practice of breast self-examination among female medical students in a medical college. Surg Updat Int J Surg Orthop. 2016;2(4):67–70.

8. Plesnicar A, Golicnik M, Fazarinc FK, Kralj B, Kovac V, Plesnicar BK. Attitudes of midwifery students towards teaching breast self-examination. Radiol Oncol. 2010; 44(1): 52-56.

Received date: 05 April 2025
Accepted reviewed version date: 06 June 2025

9. Hawsauer AK, Keegan TH, Chang ET, Glaser SL, Howe H, Clerke CA. Recent trends in breast cancer incidence in US white women by country level urban/ rural and poverty status. Biomed Cent Med.2009; 7:31.

10. Alatise OI, Lawal OO, Olasode OO, Adesun kanmi AR. Breast fine needle aspiration cytology in a Nigerian tertiary hospital. East Cent Arf J Surg. 2007; 12:126-132.

11. Dundar PE, Ozmen D, Ozturk B, Haspolat G, Akyildiz F, Coban S et al. The knowledge and attitudes of breast self examination and mammography in a group of women in a rural area in Western Turkey. BMC Cancer. 2006; 6:43.

12. NessaA, HussainT, AlamSM, FarukI, JahanI. Age distribution pattern of female breast cancer patients in Bangladesh- developing early and presenting late. IntSurg J. 2018;5(2):379-382.

13. Sarker R, Islam MS, Moonajilin S, Rahman M, Gesesew HA, Ward PR. Knowledge of breast cancer and breast self-examination practices and its barriers among university female students in Bangladesh: Findings from a cross-sectional study. PLoS One [Internet]. 2022; 17(66): 1–12. Available from: http:// dx.doi. org/10. 1371/ journal.pone.

14. Hussain SA, Sullivan R. Cancer control in Bangladesh. Japanese journal of clinical oncology. 2013; 43 (12):1159–69. https:// doi. org/ 10.1093/jjco/hyt140 PMID: 24163419

15. Yip CH, Anderson BO. The Breast Health Global Initiative: clinical practice guidelines for management of breast cancer in low-and middle-income countries. Expert review of anti cancer therapy. 2007; 7(8): 1095–104. https:// doi.org/ 10.1586/ 14737140. 7.8.1095PMID: 18028018

16. Begum BM, Khatun F, Mallick DR. Knowledge, Attitude, and Practice of Breast Self-Examination among Women in Bangladesh. IOSR Journal of Nursing and Health Science (IOSR-JNHS) e-ISSN: 2320– 1959.p- ISSN:2 320–1940 Volume 8, Issue 5 Ser. V. (Sep -Oct.2019),PP69-79 www.iosrjournals.org

17. K MB, Kaphle HP. Breast self-examination: Knowledge, practice and associated factors among 20 to 49 years aged women in Butwal sub-metropolitan, Rupandehi, Nepal. PLoS ONE [Internet]. 2023 Jun 2;18(6): e0286676. Available from: https:// doi.org/ 10.1371/ journal.pone.0286676

18. Veena K. S., Rupavani K, Rekha R. The knowledge and attitude of breast self examination and mammography among rural women. International Journal of Reproduction Contraception Obstetrics and Gynecology [Internet]. 2015 Jan 1;1511–6. Available from: https:// doi.org/ 10. 18203/ 2320-1770.ijrcog20150738

19. Hussain SA, Sullivan R. Cancer control in Bangladesh. Japanese journal of clinical oncology. 2013 Oct 25;43 (12):1159-69.

20. Batool T, Sarwar H, Afzal M, Gilani SA. Knowledge, Attitude and Practices of Women towards Breast Self-Examination in Rural Area of Lahore, Pakistan. Annals of Punjab Medical College. 2018 Jun 12;12(2):158-61.

21. Rosmawati NH. Knowledge, attitudes and practice of breast self-examination among women in a suburban area in Terengganu, Malaysia. Asian Pac J Cancer Prev. 2010 Jan 1;11(6):1503-8.

22. Yerpude PN, Jogdand KS. Knowledge and practice of breast self-examination (BSE) among females in a rural area of South India. Natl J Community Med. 2013 Jun;4(2):329-.

23. Choudhary M, Mohanasundari SK, Ara M. Breast self-examination: knowledge, awareness, and practices among females of reproductive age group. International Journal of Research in Medical Sciences [Internet]. 2024 May 31;12(6):1999–2003. Available from: https:// doi.org/ 10.18203/2320-6012.ijrms20241548

24. Bansode A. A cross sectional study on awareness of breast self-Examination and its practice in women of rural area in South India. MedPulse International Journal of Community Medicine [Internet]. 2020 Jan 1;17(2):04–7. Available from: https://doi.org/10.26611/10111721

25. Doshi D, Reddy BS, Kulkarni S, Karunakar P. Breast self-examination: Knowledge, attitude, and practice among female dental students in Hyderabad city, India. Indian journal of palliative care. 2012 Jan;18(1):68.

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