Original Research Article

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# A Study on Knowledge About Breast Cancer and its Prevention Among Reproductive Aged Adult Women in a Selected Village of Tangail, Bangladesh

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## Abstract

**Background:** Breast cancer represents a significant health concern among women in both developed and developing countries. The incidence of breast cancer is increasing rapidly in Bangladesh.

**Aim of the Study:** The study aimed to assess knowledge about breast cancer and its prevention among reproductive aged adult women in a selected village of Tangail, Bangladesh.

**Methods:** This descriptive cross-sectional study was conducted in Nagarpur Thana, Tangail district, Bangladesh. Data was collected from ($n$ = 350) female persons. A non-probability convenience sampling technique was used, and data were collected through face-to-face interviews using a modified structured questionnaire.

**Results:** The majority of the females were graduates (34.57%). Breast cancer was known to 73.14% women ($n$ = 350), and 52.01% of them mentioned electronic media as the source of information. The majority (62%) had correct knowledge of treatment, but only a few (22%) knew the diagnostic options. Knowledge about signs and symptoms was very poor among the women. A small portion of them mentioned risk factors. The study revealed that the majority of them are in a lower-risk condition in terms of proper breastfeeding practice (99.43%), a lower level of family history, and others. Results showed that 57.14% had heard of breast self-exam, but only 2.70% were correctly performing it, and only 6.49% had correct knowledge about mammography.

**Conclusion:** All women in Nagarpur Thana of Tangail District were aware of breast cancer; their knowledge was largely limited to basic awareness rather than comprehensive knowledge. Knowledge of signs and symptoms, risk factors, screening methods, diagnosis, and treatment was insufficient, and participation in screening practices remained low.

**Keywords:** Knowledge, breast cancer, prevention, Tangail, Bangladesh

## Introduction

Breast cancer represents a significant global health challenge for women, with its burden increasingly evident in low- and middle-income countries. South Asia is experiencing this epidemiological shift, as reviews indicate that breast cancer now accounts for a substantial proportion of female cancers in the region and that Asian countries contribute a growing share of the global case load. Mortality rates remain comparatively high, primarily due to late diagnosis and delays in accessing appropriate treatment.[1–3] In Bangladesh, breast cancer is recognized as an

emerging yet insufficiently addressed public health issue, with limited organized early detection, low awareness, and delayed care seeking contributing to adverse outcomes.[2]

Knowledge of breast cancer is clinically significant because prognosis is closely associated with the stage at diagnosis. Early recognition of warning signs, such as a breast lump, nipple discharge, skin changes, or retraction, increases the likelihood of presentation before disease progression. Evidence from low-resource settings demonstrates that awareness, breast self-awareness, timely clinical evaluation, and accessible early detection strategies can facilitate earlier diagnosis and improve survival rates.[4,5] In Bangladesh, hospital-based data indicate that a substantial proportion of patients present at advanced stages; one study found stage III disease in 54% and stage IV disease in 22% of cases, underscoring the consequences of delayed recognition and help-seeking.[6] For women of reproductive age, this issue is particularly critical, as illness during these years may disrupt motherhood, household responsibilities, productivity, and family stability.[2,3]

Despite the increasing burden of disease, community knowledge regarding breast cancer and its prevention remains insufficient in many Asian contexts. A cross-sectional study in Eastern China reported that only a small proportion of women demonstrated high breast cancer awareness.[7] Comparable studies from Delhi and rural Central India identified inadequate knowledge of symptoms, risk factors, breast self-examination, and early care-seeking, particularly among women with lower educational attainment and those residing in rural areas.[8,9] Reviews further highlight that fear, stigma, misconceptions, and lack of accurate information continue to impede preventive behaviors and early diagnosis.[4,10] These findings indicate that breast cancer prevention strategies must extend beyond tertiary care services to include community-based education targeting women before they reach older age groups.

In Bangladesh, most available evidence to date has been hospital-based, review-based, or derived from broader programmatic contexts, rather than from village-level assessments of women's actual knowledge in rural settings.[2,6] This gap is particularly significant in areas such as Tangail, where culturally appropriate health education requires an understanding of what reproductive-aged women know, believe, and practice. Accordingly, this study aims to assess knowledge about breast cancer and its prevention among reproductive-aged adult women in a selected village of Tangail, Bangladesh.

## Methods

This descriptive cross-sectional study was conducted from August 2017 to November 2017 in selected villages of Nagarpur Upazila under Tangail district. The study population comprised reproductive-aged adult women residing in the study area during the data collection period. Women aged 18 to 45 years who were willing to participate were included in the study.

A total of 212 respondents were selected purposively using a nonprobability sampling technique, given available time and financial constraints. Before data collection, the study's purpose was explained to each respondent. Both verbal and written informed consent were obtained from all respondents. Confidentiality and privacy were maintained throughout the study, and the collected information was not disclosed to any unauthorized person. Ethical approval was obtained from the NUB ethics committee.

Data were collected by the researcher through face-to-face interviews using a semi-structured questionnaire. The questionnaire included items on socio-demographic characteristics, knowledge of breast cancer signs and symptoms, methods of diagnosis, the importance of screening, preventive measures, breast self-examination, mammography, and sources of information. Responses

related to knowledge were scored, and the overall knowledge level of the respondents was categorized as poor, average, or good according to the total obtained score. The level of knowledge was assessed by Likert scale.

The collected data were checked, coded, and entered into SPSS version 17.0 for analysis. Descriptive statistics were presented in the form of frequency and percentage, and association was assessed by Pearson's chi-square test. A *P*-value of less than 0.05 was considered statistically significant.

## Results

Table 1 shows that 42.45% of the respondents were between 18 and 29 years, 41.50% were between 30 and 39 years, and 16% were aged 40 years or older [Table 1].

Table 2 shows that the highest number of respondents (62.26%) were housewives, 1.89% were maids and cleaners, 16.51% were teachers, 6.60% were job holders, and 10.38% were students [Table 2].

Table 3 shows that most of the respondents (34.91%) were SSC, 1.89% were postgraduate, 23.59% were primary school, and 18.40% were HSC. Among the respondents, 8.96% were illiterate [Table 3].

Figure 1 shows that 72% of respondents knew about a breast lump as a breast cancer symptom. Awareness of other symptoms was lower: breast skin change (22%), areolar change (19%), nipple change (26%), nipple discharge (37%), and axillary lump (11%) [Figure 1].

Figure 2 shows that 47% of respondents mentioned clinical breast examination for breast cancer diagnosis, 18% cited breast self-exam, 12% knew about mammography, and 23% gave no answer [Figure 2].

Figure 3 shows that 57% of respondents agreed that breast cancer screening is important, 9% felt it was not important, and 34% did not know whether it was necessary [Figure 3].

Table 4 shows that knowledge regarding breast cancer was generally inadequate among participants. While 62% were aware of breast cancer treatment, knowledge about risk reduction through nutritious food (40%), physical exercise (28%), breast self-examination (47%), regular

**Table 1:** Distribution of respondents by age ($n = 212$)

| Age (years) | Frequency (*n*) | Percentage (%) |
|---|---|---|
| 18–29 | 90 | 42.45 |
| 30–39 | 88 | 41.50 |
| 40–45 | 34 | 16.05 |
| **Total** | **212** | **100.00** |

**Table 2:** Distribution of respondents by occupation ($n = 212$)

| Occupation | Frequency (*n*) | Percentage (%) |
|---|---|---|
| Housewife | 132 | 62.26 |
| Teacher | 35 | 16.51 |
| Students | 22 | 10.38 |
| Job holders | 14 | 6.6 |
| Day laborer | 5 | 2.36 |
| Maid & Cleaner | 4 | 1.89 |
| **Total** | **212** | **100.00** |

**Table 3:** Distribution of respondents by educational qualifications ($n = 212$)

| Educational qualification | Frequency (*n*) | Percentage (%) |
|---|---|---|
| Illiterate | 19 | 8.96 |
| Primary school | 50 | 23.59 |
| SSC | 74 | 34.91 |
| HSC | 39 | 18.4 |
| Graduate | 26 | 12.26 |
| Post-graduate | 4 | 1.89 |
| **Total** | **212** | **100.00** |

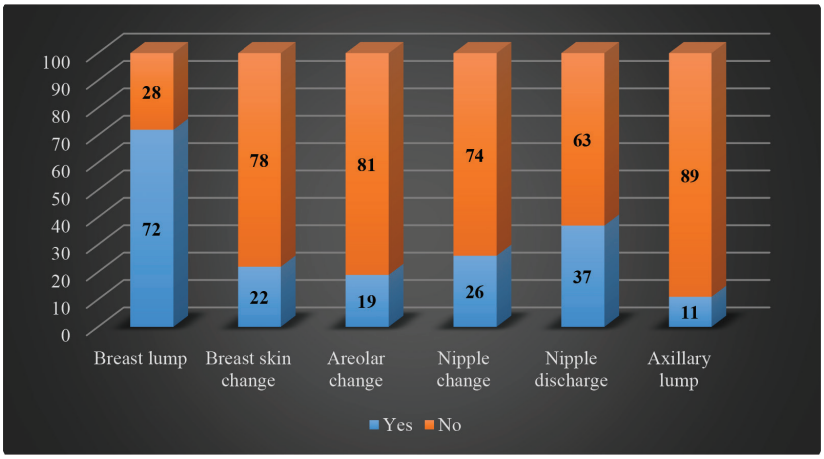


**Figure 1:** Distribution of respondents by their knowledge about signs and symptoms of breast cancer ($n$ = 212).

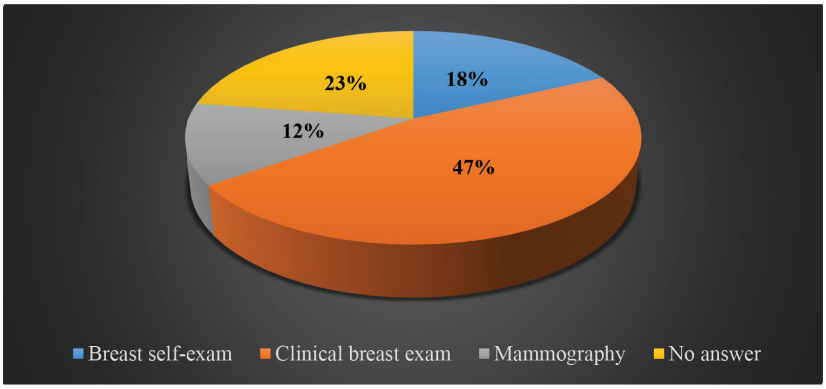


**Figure 2:** Distribution of respondents by their opinion on diagnosis of breast cancer ($n$ = 212).

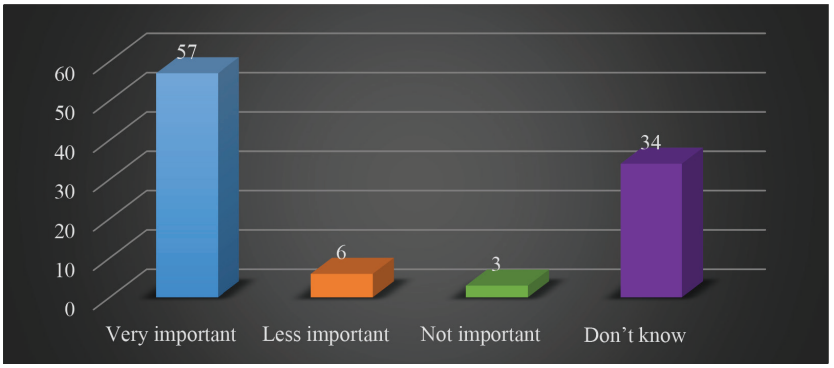


**Figure 3:** Distribution of respondents by their opinion about the importance of breast cancer screening ($n$ = 212).

BSE practice (33%), and mammography (23%) was relatively low [Table 4].

Figure 4 shows that 63% of respondents had average knowledge, 18% poor, and 19% good knowledge of breast cancer [Figure 4].

Table 5 shows that most respondents (42.34%) were informed about breast cancer by family members. Electronic media and TV/Radio accounted for 30%, newspapers for 22%, and NGOs for 5.66% [Table 5].

**Table 4:** Distribution of respondents by their knowledge about breast cancer

| Knowledge | Yes | No |
|---|---|---|
| The treatment of breast cancer | 62 | 38 |
| Nutritious food (fruits and vegetables) can lower the risk of breast cancer | 40 | 60 |
| Physical exercise can lower the risk of breast cancer | 28 | 72 |
| Method of performing of breast self-examination | 47 | 53 |
| Regular performing breast self-examination | 33 | 67 |
| Knowledge about mammography | 23% | 77% |

Table 6 shows that education and occupation, but not age, are linked to overall knowledge of breast cancer [Table 6].

## Discussion

A descriptive cross-sectional study was conducted among 212 rural women from Nagarpur thana, Tangail district, Bangladesh. Participants aged 18 to 45 years were randomly selected. Knowledge and awareness of breast cancer, breast self-examination practices, and other health behaviors were assessed using a structured questionnaire. The majority of respondents (42.45%) were in the 18–29-year age group, and 62.26% were housewives. Approximately 42.34% learned about breast cancer from family members and relatives, while 30% cited electronic media as their source. This proportion is lower than that reported by Moya et al., who found that television was the main source of knowledge (72%) among 85% of the Western population. In that study, participants were more highly educated (69%) compared to the present sample, most of whom had completed secondary school (34.91%).[11]

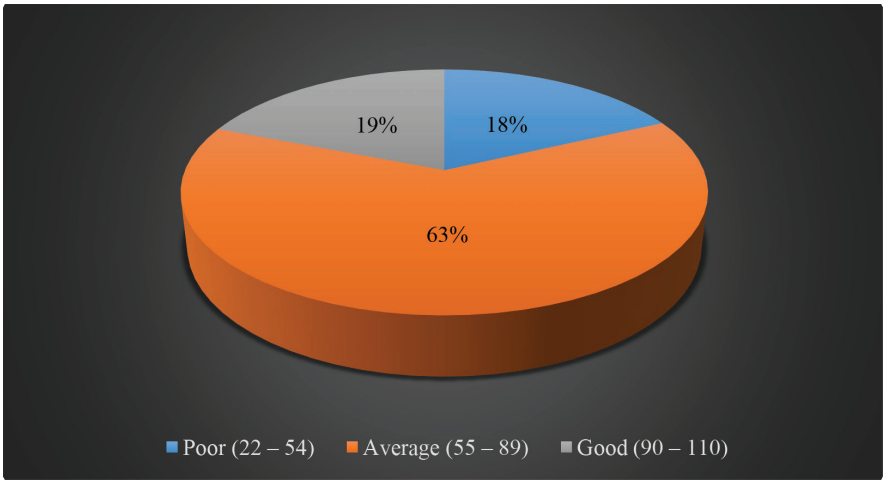


**Figure 4:** Distribution of respondents by their overall Knowledge level about breast cancer ($n$ = 212).

**Table 5:** Distribution of respondents by source of information about breast cancer ($n$ = 212)

| Source of knowledge | Frequency ($n$) | Percentage (%) |
|---|---|---|
| TV/Radio | 64 | 30 |
| Newspaper | 47 | 22 |
| Family members & relatives | 89 | 42.34 |
| NGOs | 12 | 5.66 |
| **Total** | **212** | **100.00** |

**Table 6:** Distribution of the respondents by showing association among age, education, occupation and overall knowledge level on breast cancer ($n$ = 212)

| Sl no. | Subject | *P*-value |
|---|---|---|
| 1 | Between age and overall knowledge | 0.526 |
| 2 | Between education and overall knowledge | 0.001 |
| 3 | Between occupation and overall knowledge | 0.008 |

*P* value obtained from Pearson Chi-square ($\chi^2$) test.

Among the 212 respondents, the majority (83%) were married, and 85.96% of these had children. In most cases (88.82%), the number of children exceeded one. Nearly all respondents (99.43%) breastfed their children for more than six months; however, only 14.45% were aware that breastfeeding can reduce the risk of breast cancer. A small proportion (0.57%) were unable to breastfeed due to insufficient milk production. Having more than one child may also contribute to a reduced risk of breast cancer. Cuzick J reported similar preventive factors in developing countries.[12]

Respondents identified several signs and symptoms of breast cancer. The most commonly recognized symptoms were a new lump (72%), skin changes (22%), and pain or discomfort (25.78%). Few respondents were aware that changes in the nipples, nipple discharge, or a lump in the axilla could also indicate breast cancer. Only 8% of respondents reported a family history of breast cancer, most commonly involving an aunt or sister. A similar result was observed in the study by Chantal and Stephen, where 45% of participants recognized family history as a risk factor for breast cancer.[13] Although a significant proportion (84.76%) were unaware that the onset of menstruation before age 12 is a risk factor, the majority (72%) experienced menarche at age 12 or older, which places them at lower risk. places them at lower risk.

Respondents indicated that controlling the use of hormone replacement therapy (44.53%) is the most effective strategy to reduce breast cancer risk. Only 40.47% recognized the role of nutritious food, and 28.93% identified regular exercise as protective factors. Jabeen S et al. demonstrated that hormone replacement therapy is a risk factor, while nutritious food and regular exercise are protective.[14] Mahajan K identified a non-vegetarian diet as an important risk factor for breast cancer.[15] Most respondents (62%) demonstrated knowledge of breast cancer treatment options, correctly identifying surgery (38.01%), chemotherapy (39.58%), hormone therapy, and radiation. In the study by Moya et al., overall knowledge of treatment was higher, with nearly 83% of participants demonstrating awareness.[11]

Breast self-examination is recommended monthly after age 20.[16] In this study, respondents were aged 18 years or older. Of these, 47% knew how to perform breast self-examination, but only 33% practiced it regularly. In comparison, 53% of Asian women regularly perform breast self-examination.[17] Mammography is recommended every three years beginning at age 40. Among study participants, 16.05% were aged 40 years or older, but only 23% were aware of mammography as a screening test, whereas 57% of Asian women aged 40 years and above had undergone a screening mammogram.[17] None of the respondents had detailed knowledge of clinical breast examination, although 47% had heard of it. Only 57% of respondents recognized the importance of breast cancer screening; the remainder lacked knowledge. In contrast, Wu T et al. reported that approximately 75% of women in China had no knowledge of mammography.[18]

## Conclusion

In conclusion, although all women in Nagarpur Thana of Tangail District were aware of breast cancer, their knowledge was largely limited to basic awareness rather than comprehensive knowledge. Knowledge of signs and symptoms, risk factors, screening methods, diagnosis, and treatment was insufficient, and participation in screening practices remained low. This disparity between general awareness and detailed understanding underscores the need for immediate, targeted interventions by policymakers and health professionals to enhance education, outreach, and screening initiatives.

## Ethical Approval

The study was approved by the Institutional Ethics Committee.

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