

Research Article

Study Shows No Awareness of Breast Cancer Screening Among Women in Rural Areas in Coastal Karnataka Compared to Nearby Urban Areas

Papiya Bhattacharya^{1, 2, *} , Varalakshmi Nadumane³ , Priyanca Mathur¹ 

¹Centre for Research in Social Sciences and Education, Jain (Deemed to be University), Bangalore, India

²Visiting Faculty, Srishti Manipal Institute of Art, Design and Technology, Bangalore, India

³Sciences, Jain (deemed to be University), Bangalore, India

Abstract

Background and objectives: Breast cancer (BC) is the leading cancer in Indian women. This study examined relationships between demographic variables of women in rural Vitla and urban areas of Mangalore, Moodbidri and Puttur in Dakshina Kannada District and their awareness of BC screening policy, BC and health insurance. The objectives were to know if rural women have adequate knowledge of BC screening. **Methods:** 100 women cashew factory workers in Vitla were given an oral questionnaire in Kannada and 65 women from urban areas of Mangalore, Moodbidri and Puttur were given the questionnaire in English. **Results:** Answer sets were analysed, results indicated no significant correlation between respondents' education and awareness about BC Screening, Self-Examination (BSE) and government screening policies in Vitla (Dakshina Kannada). No relationship was observed between age and awareness. Women in Vitla (Mangalore is 40 km away from Vitla), were aware of BC and had Ayushman Bharat cover; yet they had no idea about screening or its policy but agreed to screen if motivated. All urban women had received higher education, some had heard of BC screening and had health insurance yet were unwilling to screen. Others had not heard of screening but were willing to go. **Interpretation and conclusions:** India has a 2016 Government policy to screen BC which has not reached all rural women. It must be implemented effectively as early diagnoses and detection can reduce mortality in BC.

Keywords

Breast Cancer, Screening Policy, Policy Review, Breast Self-examination, Early - Diagnosis, Policy Awareness

1. Introduction

Breast cancer (BC), the leading cancer among women in India and worldwide, with a five-year survival rate of only 66 per cent as compared to 90 per cent in high-income countries, can be effectively treated and controlled if detected early. India has a policy for breast cancer screening along with oral

cancer screening. [3, 5, 6, 8] Literature suggests that breast cancer screening is lower than cervical and oral cancer screening. [7, 23].

Educated women with a job and/or better awareness of screening policies are more likely to go for check-ups. [9, 19,

*Corresponding author: papiyais@gmail.com (Papiya Bhattacharya)

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21, 27] However, there is a need for health education. [16] Barriers to screening in women exist in the form of reluctance to go to doctors, stigma about the disease, time, forgetfulness, as well as fear and embarrassment to discuss women's bodies. [20, 24, 25].

Some studies felt that involving cancer survivors as educators and empowering men on women's health could improve health accessibility. [17, 22].

Studies find that rural women are less likely than urban women to go for breast screening. [15, 21] Studies of breast screening show that women with greater access to health care, such as health insurance, are choosing to go for breast cancer screening. [4, 14].

Under Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB PMJAY), each underprivileged family is provided with annual health insurance coverage of Rs. Five lakhs for hospital-based treatments. [28] Studies have outlined how women under ABPMJAY can be helped, especially cancer patients who can be linked to the National Cancer Grid to make the whole process more effective. [11] Five years after AB PMJAY was launched, we are in a transition phase with studies analyzing individual aspects of the scheme and the ways in which it could be made more effective [17], which is a huge step towards Universal Health Care.

However, there are no studies regarding the awareness of screening policy among women in Karnataka. As per reports, screening is necessary for the early diagnosis and control of breast cancer. [10].

Keeping this in view, an attempt was made to study the awareness of the screening policy among rural and urban women in Dakshina Kannada District of Karnataka, since early detection is the key for treatment success and prolonged survival of BC patients.

2. Materials and Methods

2.1. Design

The team on the field consisted of only the first author. A qualitative study was designed with a questionnaire developed based on existing literature and experts' opinions. Participants were women working in a cashew factory in Vitla, Dakshina Kannada. 65 Women in Moodbidri, Mangalore and Puttur, the urban areas near to Vitla, were chosen for comparison and were given the same questionnaire.

2.2. Participants

100 women in the age group of 18-55 in the rural hamlet of Vitla and 65 women in the same age group in Moodbidri, Mangalore and Puttur were approached with the questionnaire and all of them answered the questions.

2.3. Data Collection

A questionnaire was developed with the help of previous studies and the current study objectives. It had five sections. The first section was the consent form; second was on demographic characteristics; third was general knowledge of breast cancer, fourth was on awareness of breast cancer symptoms and risk factors as well as health insurance while the fifth section was about barriers in breast cancer screening.

The aim of the study was explained to the participants and only who were willing to participate were considered with their consent and were given the questionnaires. They were also informed that their participation was voluntary, and they could withdraw from the study at any point of time.

Ethical guidelines of ICMR were followed throughout the study and Ethical clearance was obtained from the Institutional Ethical Committee of JAIN University.

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The questions were:

Section I – informed consent form

Section II (Socio demographic information)

Section II covered socio-demographic characteristics like age, marital status, height, weight, education, employment status and occupation.

Section III (Yes or no questions)

Section III included 11 questions about their knowledge about BC, awareness regarding BC screening programs, awareness, and practice of breast self-examination, about diagnosis, and regarding treatment options.

Section IV (Yes or no questions)

Section IV included 12 questions on risks and symptoms of BC and the perceived causes of the disease, men getting BC and whether the women had health insurance cover.

Section V (Yes or no questions and one detailed question)

Section V had 8 questions on barriers to breast examination or screening in hospitals and by male doctors and if awareness camps were useful. One question asked if they could get vaccinated for Covid, would they go for a breast cancer screening sometime in the year, even though it was not as urgent as the Covid vaccination and required them to give reasons for their decision. Background information was requested at the beginning of the questionnaire.

The questions were tested on ten women orally as a pilot study before it was shared with the participants. The results showed that the questionnaire was adequate.

2.4. Procedure

The participants of Vitla were given the questionnaire as hard printed copies in Kannada language. The interviews were oral and face to face. The recorded answers were saved as written data. The participants from Moodbidri, Mangalore and Puttur were given the same questionnaires in English on Google Forms or as printed hard copies. Recorded answers were saved as written data.

2.5. Statistical Analysis

The data from the interviews were subjected to qualitative content analysis. The transcripts were read multiple times to make notes. The analysis involved highlighting meaningful phrases in the answers. Peer checking and disagreements were discussed. Each response category was assigned a specific number and recorded in Excel spreadsheets. Thus, participants who responded in category 1 in the affirmative were

coded as 1. Answers in the negative were coded as 0. Multiple answers were coded in values of 0, 1, 2, 3 and so on. The data was analysed using Microsoft Excel Software.

3. Results and Discussion

The study analysed the demographic variables in relation to the knowledge of screening and related policy among the participants.

3.1. Women from Rural Areas

Table 1. Some key characteristics of BC awareness among cashew workers in Vitla.

Vitla	100 women cashew workers
Education	2 can read and write; 10 have read till primary school; 50 have studied high school; 35 have studied till pre university class while 3 were graduates.
Heard about Breast Cancer (BC)	24 (24%)
Heard about Screening of BC	0 (0%)
Tested positive for BC	0 (0%)
Hesitation with doctors touching their body	63 (63%) are hesitant
Willingness to go for screening	100 women
Reason to go for screening	100% women said that if someone asks them to go, they would. Motivation was necessary.
Insurance	100 have govt health insurance. (Ayushman Bharat)
Breast self-exam	0 were aware of BSE and none practiced it
Alcohol as a risk factor	18 (18%) think so
Areca nut chewing as a risk factor	56 (56%) think so
Not breast feeding as a risk factor	4 (4%) think it is a risk
Are busy, have no time to go and test themselves	100 are busy
Men can get BC	100 think that men cannot get BC
Married	89 are married

Awareness of screening policy and BSE: The analysis of data revealed that only 24 (24 per cent) participants from Vitla had heard of Breast Cancer though they are near Mangalore, Puttur and Moodbidri which have medical colleges and hospitals (Table 1, The author). None of the women respondents in the rural hamlet of Vitla were aware of BC screening in our study, when asked about government screening camps or Breast Self-Examination (BSE). However, they were willing to go for screening if they were asked to.

Among the Vitla participants, no one practiced BSE. Among them, 63 per cent were hesitant in letting doctors touch their bodies to examine them.

A review of 37 studies between 2005 and 2018, suggests

that awareness and practice of BSE among Indian women was significantly low. [13].

Our data analysis results support the above study and show a complete lack of knowledge and practice of BSE among rural participants, though all participants in the study group were educated (at least can read and write) and were employed in the cashew factory.

3.2. Relationship Between Education Level and Awareness About BC Screening

Analysis of our data, however, revealed no significant relationship between education levels and awareness of BC

screening or BC screening programs among the respondents. Despite the respondents' varying educational backgrounds, there was a general lack of awareness regarding screening among the rural respondents.

Earlier studies have indicated a positive relationship between education levels and awareness. [2, 4, 12, 14] Studies among Jordanian Women and African women in five countries in Sub-Saharan Africa have shown that women with higher education are more likely to be aware of early breast cancer detection and were likely to go for screening. [2, 4, 14, 15] Our data does not support the finding, probably because participants were in a rural area with no access to government camps for screening (Table 1).

Additionally, a study [22] suggests that health workers help in motivation and these women are more likely to agree to screening if advised by health professionals.

Relationship between health insurance and awareness about BC screening: All the women had health insurance under Ayushman Bharat, which covers health treatment up to Rs five lakh. Findings from our data show no relationship between health insurance and knowledge of screening but the women are willing to go for BC screening if motivated to do so (Table 1).

Studies suggest that health insurance cover improves possibility of screening. [14] It appears that lack of knowledge about BC screening and awareness is the reason for rural women not opting for BC screening.

Additionally, our study suggests that all these women don't have time to go for screening as when they take off from work, they may get a pay cut so they cannot go on weekdays for screening.

The women don't think men can get breast cancer. However, they think drinking alcohol (18 per cent), chewing areca nut

(56 per cent) and not breast-feeding babies (4 per cent) could be risk factors.

3.3. Women from Neighbouring Areas of Mangalore, Moodbidri and Puttur Give No Reason for Not Screening

As shown in Table 2, 65 women from urban areas of Mangalore, Moodbidri and Puttur answered the questionnaire.

While 59 participants (90.76 per cent) had heard about Breast Cancer and 40 women (61.53 per cent) had heard of screening, only 33 women (50.76 per cent) want to go for screening even though all 65 women were well educated and had studied till tenth standard and above.

Many (72.30 per cent) of the participants gave no reason regarding for/ against screening, others (10.76 per cent) cite that they want to be healthy; 4.61 per cent say that it's better to detect and diagnose in early stages; early detection can create awareness about BC, its prevention and can share their knowledge/ educate people, while some (4.61 per cent) say that screening was not needed until they had health trouble. 20 women (30.76 per cent) are hesitant about letting doctors touch them. One (1.53 per cent per cent) said she would go if there was a female doctor.

A study among Omani women showed that cultural, practical, and personal related barriers came in the way of screening while a study in England showed that women preferred not to know. [1, 7, 12] Our data analyses of women in urban Dakshina Kannada shows a similar pattern of hesitancy in screening even among women with health insurance and knowledge of screening.

Table 2. Knowledge of BC and Socio-demographic parameters of Women from Moodbidri, Mangalore and Puttur.

Moodbidri, Puttur and Mangalore	65 women
Education	5 had read till pre university levels; 36 were graduates; 19 were post graduates; 5 had studied other levels
Heard about Breast Cancer (BC)	59 (90.76%)
Heard about Screening of BC	40 (61.53%)
Tested positive for BC	0 (0%)
Hesitation with doctors touching their body	20 (30.76%) are hesitant
Willingness to go for screening	33 (50.76%)
Reason to go for screening	Most (72.30%) of the women give no reason, others (10.76%) cite that they want to be healthy; some (4.61%) say that it is better to detect and diagnose in early stages; early detection can create awareness about BC, its prevention and I can share my knowledge/ educate people while some (4.61%) say that it is not needed till, they have a problem. One woman said would go if there was a female doctor.
Insurance	34 (52.30%) have insurance

Moodbidri, Puttur and Mangalore	65 women
Breast self exam	38 (58.46%) are aware
Alcohol as a risk factor	30 (46.15%) think so
Areca nut chewing as a risk factor	21 (32.30%) think so
Not breast feeding as a risk factor	36 (55.38%) think so
Are busy, have no time to go and test themselves	19 (29.23%) are busy
Men can get BC	29 (44.61%) think so
Married	34
Unmarried/widows	29/2

3.4. Comparison of the Awareness Status of Rural and Urban Women Participants

As is evident from the graph (Figure 1), a higher percentage of urban women had awareness about BC and about its screening than rural counterparts. Even about breast self-examination, more of urban women knew about it, while none among the rural women had heard about BSE.

On the contrary, all (100 per cent) the rural women were willing to go for BC screening, if they were asked to go as

compared to only 50.76 per cent of urban counterparts. Lack of knowledge of screening and motivation appear as major factors in screening hesitancy among rural women. At the same time, a higher percentage (63 per cent) of rural women show hesitation to doctors touching their bodies than urban women (30.76 per cent). Besides these, it was observed that all (100 per cent) of the participants of rural women had health insurance (Ayushman Bharat) as compared to only 52.3 per cent of urban women. This is supported by a study on the successful implementation of ABPMJAY. [28].

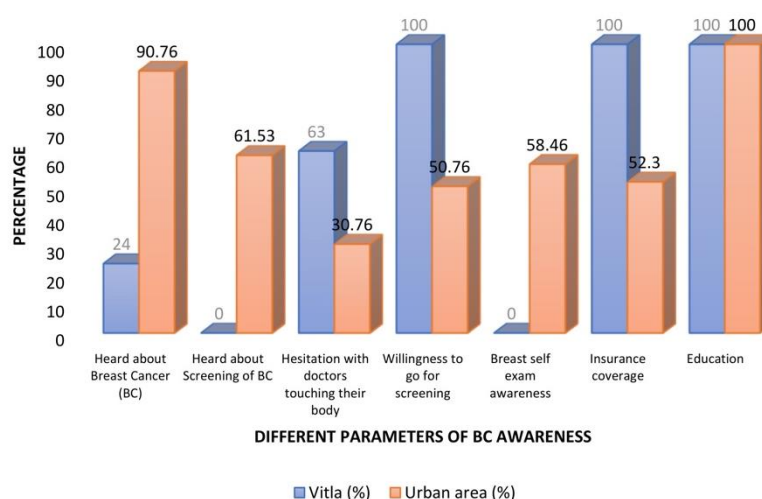


Figure 1. (ORIGINAL): Comparison of the awareness about BC, screening BC, education, and insurance status of women in Vitla (rural) and urban areas near Vitla.

As per a previous study, mortality rates of breast cancer are high and a global initiative such as the recent goals of WHO GBCI, 2021 as well as World Health Organization, 2023 will help stem cases but effective implementation of screening is necessary. [24] My study suggests a health policy more suited to needs of women in rural and urban areas of India could lead to a higher number of women who agree to screen for BC.

Studies suggest that women are more likely to go for screening if they are educated, have an awareness of breast cancer at an earlier age, have health insurance cover, are secure economically and can overcome personal barriers. [7, 10, 11, 15, 16, 18, 20, 27, 30, 31].

Our study also suggests that the same factors influence decisions of women who decide to undergo screening to some

extent but beyond that they also need motivation and the presence of women in the health centers to help them feel comfortable in the process of screening. A study supports our observation. [32].

In conclusion, low awareness of BC screening was observed in rural areas along with a hesitation to undergo testing by doctors, while in urban conditions a slightly better awareness was found with reluctance to get screened. It can be suggested that a better uptake of the existing policy [6, 26, 29] of 2016 in breast cancer screening could be ensured with local screening camps, particularly in rural areas highlighting benefits of screening. [33].

Leading a public campaign with images of positive outcomes along with easy and comfortable screening with women health practitioners could increase BC screening among all women, including those in urban areas.

4. Concluding Note

A focus on increasing awareness and benefits of breast cancer screening through various methods such as employing NGOs, social health workers such as ASHA workers and easy accessibility to screening can help women to undergo increased screening and decrease the incidence of breast cancer in India.

Abbreviations

BC	Breast cancer
AB PM JAY	Ayushman Bharat – Pradhan Mantri Jan Arogya Yojana
ICMR	Indian Council of Medical Research
BSE	Breast Self-Exam
WHO	World Health Organization
GBCI	Global Breast Cancer Initiative

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Author Contributions

Papiya Bhattacharya: Conceptualization, Data curation, Formal Analysis, Investigation, Methodology, Resources, Software, Validation, Visualization, Writing – original draft, Writing – review & editing

Varalakshmi Nadumane: Conceptualization, Project administration, Supervision, Validation, Visualization, Writing – review & editing

Priyanka Mathur: Supervision, Validation, Writing – review & editing

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Conflicts of Interest

The authors have no conflicts of interest to disclose.

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