

## Research Article

# Breast cancer awareness among women in Vikhroli: a suburban area of Mumbai, Maharashtra, India

Sharayu D. Shinde<sup>1</sup>, Suhas B. Kadam<sup>2\*</sup>

<sup>1</sup>GATS-2, TISS, Mumbai, Maharashtra, India

<sup>2</sup>Research and Documentation, State Health Systems Resource Center, Pune, Maharashtra, India

**Received:** 23 June 2016

**Accepted:** 12 July 2016

### \*Correspondence:

Dr. Suhas B. Kadam,

E-mail: [drsuhas.tiss@gmail.com](mailto:drsuhas.tiss@gmail.com)

**Copyright:** © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

## ABSTRACT

**Background:** Breast cancer, the second most common cancer among Indian women, accounts for seven percent of global burden of the disease. Survival rate among women with breast cancer is very poor because most of them sought treatment in advanced stage of the disease. Lack of awareness about the disease and poor facilities of screening programme may be the reason in delay for treatment. To determine the awareness about breast cancer among women in Vikhroli - a suburban area of Mumbai

**Methods:** A community based cross sectional study is carried out in Vikhroli, a suburban area of Mumbai. Quota sampling method was used to select and include 235 women in the study. Semi-structured interview schedule was used to collect the information on breast cancer. Tabular presentation, chi square and contingency coefficients were used for data analysis.

**Results:** Though the respondents have heard about breast cancer, they do not have in-depth knowledge about risk factors, signs and symptoms and methods of early detection. Socioeconomic status differentials are found in knowledge about breast cancer and the two are weakly associated.

**Conclusions:** The awareness about breast cancer is low amongst women in this community. There is a need for awareness generation programs to educate women about breast cancer, propagation of correct messages and promote early detection.

**Keywords:** Awareness, Breast cancer, India, Early detection, Slums in Mumbai

## INTRODUCTION

Breast cancer, the second most common cancer among Indian women accounts for seven percent of global burden of the disease. It is the number one cancer among urban women especially in metropolitans' areas of India. Moreover, data from national and regional cancer centers from 1984 to 2002 also show that there is an increase in the incidence of breast cancer and found to be gradually overtaking cancer of the cervix.

Most of the patients seek medical advice when the disease is fairly advanced. Over 70% of the cases report for diagnostic and treatment services in advanced stages

of the disease, resulting in poor survival and high mortality rates.<sup>1</sup> Early Breast Cancer (EBC) constitutes only 30% of the breast cancer cases seen at different cancer centers in India whereas it constitutes 60-70% of cases in the developed world.<sup>2</sup>

The incidence rate of breast cancer is approximately three times higher in urban areas as compared to rural areas. The incidence rates are 33 and 32.1 per 100,000 women respectively in the greater metropolitan areas of Mumbai and Chennai whereas the rates are 24.4 and 25.5 per 100,000 women respectively in smaller cities like Pune and Bhopal. The incidence rate is 7.7 in rural areas of Barshi while it is double in Barshi town (15 per 100,000 women).<sup>3</sup> This situation is attributed to lack of awareness

and not properly functioning of breast cancer screening programs in India. As breast cancer is a topic that is not freely discussed in India because of cultural taboo, there is an urgent need for information and education on awareness of breast cancer and its early detection measures. The scenario highlights the need for study of awareness about breast cancer among urban women. Therefore, a cross sectional community based study has been done in suburbs of Mumbai with the aim to determine the awareness about breast cancer among women in Vikhroli - a suburban area of Mumbai.

## METHODS

A community based cross sectional study is carried out in Vikhroli, a suburban area of Mumbai. The study area is the field practice area of School of health systems studies of Tata Institute of Social Sciences, Mumbai.

### Sampling

Quota sampling method was used to select 235 women between ages of 30 - 50 years as the respondents. Level of education of the respondents and type of house they are living in were considered to fix quota for selecting sample. But due to time constraint and women for particular quota were not found so 235 women between age group of 30 to 50 years residing in Vikhroli were interviewed.

A pre-tested semi-structured interview schedule was administered to collect information regarding various aspects of breast cancer such as early warning signs, risk factors, early detection measures and their source of information.

Data were collected in from April 2011 - June 2011.

### Data collection

Semi-structured interview schedule was used to collect the data from the respondents. The respondents were given information about nature and purpose of study before starting interview. They were given option of non-participating as well withdrawal from process at any point of time of interview.

### Ethical issues

The objectives were explained to the study participants and verbal informed consent was obtained. During the course of the study, those women who needed any kind of medical treatment were referred to the nearest clinics or to a public health facility as required.

### Data analysis

Data were entered in MS excel and analysis was done using SPSS version 15. Chi-square was applied to test the difference in awareness levels by literacy, socio

economic status and age. Tabular presentation, chi square and contingency coefficient were used for data analysis.

## RESULTS

In total 250 women were contacted for the study on breast cancer awareness. 15 women refused to participate.

**Table 1: Quota sampling - educational level and housing patter.**

Educational level of respondents	Housing pattern			Total
	Kuccha / Semi - Pucca	Pucca (1 room)	Pucca (2+ rooms)	
Illiterate / Semi- literate	30	25	20	75
Middle /Secondary schooling	30	30	30	90
H.S.C. Graduation	10	30	30	70
Total	70	85	80	235

### Socio demographic characteristics of the respondents

The information on the background characteristics of the respondents is given in table 2. Out of 235 of respondents who participated in study, about two thirds (64%) are in the age group of 30 -40 years. Almost all the respondents are ever married. Majority of them are Hindus (61%). Since the study has used education and economic status as quota control, the findings show an equitable distribution in socioeconomic categories. Out of the 235 women interviewed, 188 women (80% percent) heard about breast cancer as a disease. The following results show their awareness about different aspect of breast cancer. It was seen that the proportion of women who were aware increased as the literacy status increased; similarly, those who belonged to higher socioeconomic status were more aware about breast cancer as compared to those belonging to a lower SES.

### Knowledge about risk factors of breast cancer

According to American Cancer Society, certain physical and physiological factors / conditions are the risk factors or preventive factors for breast cancer among women. Some of this include gender, aging, race and ethnicity, certain benign breast conditions, previous chest radiation, age at menarche, age at menopause, null parity, having first delivery after age of 30 years, breastfeeding, consumption of oral contraceptive pill, having HRT, obesity and consumption of alcohol more than the recommended quantity.<sup>4</sup> Some of these are considered in the present study.

In the present study, awareness about risk factors among the respondents is very poor. The respondents know that

early age at menarche (6.4%), late age of menopause (30.2%), history of abortion (35%), null parity (19%), first delivery after age of 30 (15%), addiction to alcohol (49%) and consumption of oral contraceptive pill (30.2%) have an important role in development of breast cancer.

**Table 2: Socio demographic characteristics of the respondents.**

Characteristics	Frequency (%) n=235
<b>Age</b>	
30 - 35 years	86 (36.6)
36 - 40 years	65 (27.7)
41 - 45 years	46 (19.6)
46 - 50 years	38 (16.2)
<b>Religion</b>	
Hindu	143 (60.9)
Neo- Buddhist	69 (29.4)
Christian/ Muslim	23 (9.8)
<b>Occupation</b>	
Home maker	128 (54.5)
School teacher , Clerical staff	59 (25.1)
Small scale business	13 (5.5)
Servant, Maid	35 (14.9)
<b>Socioeconomic status</b>	
Low	50 (21.3)
Middle	116 (49.4)
High	69 (29.4)

**Table 3: Respondents' knowledge about risk factors of breast cancer.**

Risk factors	Frequency (%)
Early age at menarche	15 (6.4)
Women having late age at menopause	71 (30.2)
Addiction to smoking and alcohol	114 (48.5)
Women who had an abortion	82 (34.9)
Nulliparous women	44 (18.7)
Women who had first baby after 30 years	34 (14.5)
Women who used oral contraceptive pill	71 (30.2)
Women who are obese	17 (7.2)
Consume high fat	10 (4.3)
Who had undergone hormone replacement therapy	7 (3.0)

Very few respondents know that obesity (7.2%), high fat consumption (4.3%) and undergoing hormone replacement therapy (3%) are other risk factors of breast cancer while one third of the respondents (37%) considered breastfeeding practices as protective factor (Table 3). Forty - three percent of the respondents do not know any of the risk factors while 25 percent know most of the risk factors. Majority of the respondents who know most the risk factors are from higher socioeconomic status (45%) A moderate association (0.39) is observed between socioeconomic status and knowledge about risk factors (Table 4).

**Table 4: Respondents' knowledge about risk factors by their socioeconomic status.**

Knowledge about risk factors	Socioeconomic status			
	Low	Middle	High	Total
No knowledge	58 (63.7%)	26 (34.7%)	16 (23.2%)	100 (42.6%)
Some knowledge	29 (31.9%)	25 (33.3%)	22 (31.9)	76 (32.3%)
More knowledge	4 (4.4%)	24 (32%)	31 (44.9)	59 (25.1%)
Total	91 (100%)	75 (100%)	69 (100%)	235 (100%)
Pearson chi square	0.000			
Contingency coefficient	0.39			

### **Knowledge about signs and symptoms**

Thirty -five percent of the respondents do not know any of the signs and symptoms of breast cancer while twenty-two percent know more than two signs and symptoms. Sixty percent of the respondents knew that 'painless lump in breast' is the main sign/ symptom of breast cancer. Twenty -seven percent consider changes in shape and size of breast while 20 percent reported that discharge from nipple is a symptom of breast cancer. Only nine percent know that inverted nipples as sign / symptom of breast cancer (Table 5). A moderate association (0.36) is observed between socioeconomic status and knowledge

about sign and symptoms. One third of the respondents from higher socioeconomic status know two and more signs and symptoms of breast cancer while 11 percent from low socioeconomic status (Table 6).

Women should be aware that breast cancer is curable to go for treatment. Two thirds of the respondents know that breast cancer is curable. Majority of the respondents who know that 'breast cancer is curable' are from higher socioeconomic status (84%). However the observed association between the knowledge and socioeconomic status is very weak (0.28) (Table 7).

**Table 5: Respondent's knowledge about signs and symptoms.**

Sign and symptoms	Frequency(%)
Painless lump in breast	141 (60)
Change in shape and size of breast	64 (27.2)
Discharge from nipples	46 (19.6)
Inverted nipples	22 (9.4)
No. of signs / symptoms known	
No knowledge about it	83 (35.3)
Knows at least one symptom	101 (43)
Knows two and more symptoms	51 (21.7)

**Knowledge about 'breast cancer is curable'**

A less than half of the respondents (45%) are aware that surgery as a curative measure of breast cancer followed by chemotherapy (29%) and radiotherapy (27%). Though majority of the respondents are aware of the local govt. / private hospital for cancer treatment, they are not clear about the physician (oncologist/ gynaecologists/ general physician) to whom they can approach when suspect breast cancer.

**Table 6: Respondents' knowledge about signs / symptoms by their socioeconomic status.**

Knowledge about signs /symptoms	Socioeconomic status			
	Low	Middle	High	Total
No knowledge about it	51 (56%)	22 (29.3%)	10 (14.5%)	83 (35.3%)
Knows at least one symptom	30 (33%)	37 (49.3%)	34 (49.3%)	101 (43%)
Knows more than two symptoms	10 (11%)	16 (21.3%)	25 (36.2%)	51 (21.7%)
Total	91 (100%)	75 (100%)	69 (100%)	235 (100%)
Pearson chi square	0.000			
Contingency coefficient	0.36			

**Table 7: Respondents' knowledge about curability of breast cancer by their SES.**

Knowledge	Socioeconomic status			
	Low	Middle	High	Total
No / Don't know	45(49.5%)	23(30.7%)	11(15.9%)	79(33.6%)
Yes	46(50.5%)	52(69.3%)	58(84.1%)	156(66.4%)
Total	91(100%)	75(100%)	69(100%)	235(100%)
Pearson chi square	0.000			
Contingency coefficient	0.28			

**Table 8: Respondents' knowledge about early detection of breast cancer.**

Knowledge	Frequency (%)
Breast cancer can be detected early	94 (40)
Knows about technology used to early detect breast cancer	39 (16.6)
Breast cancer is curable only in early stage	131 (84)

**Table 9: Respondents' knowledge about early detection of breast cancer by their SES.**

Knowledge	Socioeconomic status			
	Low	Middle	High	Total
No / Don't know	72 (79.1%)	45 (60%)	24 (34.8%)	141 (60%)
Yes	19 (20.9%)	30 (40%)	45 (65.2%)	94 (40%)
Total	91 (100%)	75 (100%)	69 (100%)	235 (100%)
Pearson chi square	0.000			
Contingency coefficient	0.34			

### Knowledge about early detection of breast cancer

Only forty percent of the respondents know that breast cancer can be detected early (table 8). Two thirds of the respondents who know that 'breast cancer can be detected early' are from higher socioeconomic group. A moderate association (0.34) is observed between socioeconomic status and knowledge about 'breast can be detected early' (Table 9). Knowledge about the technology to be used is however is poor. Only seventeen percent of the respondents know the technology used to detect breast cancer at earlier stage like mammography and breast self-examination. Very less respondents has detailed knowledge about mammography and breast self-examination (Table 10). Misconception about breast cancer The respondents have certain misconception about breast cancer They think that 'Breast cancer is not hereditary (87.2%)', 'Breast cancer means losing one's breast (53%)', 'Trauma to breast will cause breast cancer (43.4%)', 'Breast cancer is communicable (38.3%)', (Table 11).

**Table 10: Respondents' knowledge about breast self-examination and mammography.**

Knowledge	Frequency (%)
Heard of breast self-examination	35 (14.9)
Knows how to do breast self-examination	25 (10.6)
Knows frequency of performing breast self-examination	13 (5.5)
Heard of mammography	27 (11.5)
Knows how mammography done	12 (5.1)
Knows about the age at which mammography is recommended	5 (2.1)
Knows about frequency of mammography to be done	4 (1.7)
Mammography always indicate onset of breast cancer	7 (2.9)

**Table 11: Misconceptions about breast cancer among the respondents.**

Misconceptions	Frequency (%)
Breast cancer is not hereditary	205(87.2)
Woman with big breast get breast cancer	31(13.2)
Use of antiperspirants or deodorants causes breast cancer	26(11.1)
Trauma to breasts cause breast cancer	102(43.4)
Breast cancer is communicable	90(38.3)
Breast cancer is not curable	79(33.6)
Breast cancer means losing one's breast(s)	125(53.2)
Taking mammogram is safe	4(14.18)
Mammography is not painful	1(3.7)

### DISCUSSION

In present study, we find that majority of the respondents heard about breast cancer as a disease The study also revealed that the respondents from higher socioeconomic status had more knowledge compared to those from low socio economic status. Similar findings have been reported in other studies.<sup>5,6</sup>

Few respondents are aware that breast cancer is hereditary and majority of them know that it is non-communicable. Similar findings were noted in a cross sectional study conducted at Nigeria.<sup>7</sup> The present study also revealed that knowledge about risk factors of breast cancer among the respondents is not very high and very few respondents believed that breast feeding is a protective factor. Others reported similar findings as well.<sup>5,6</sup> Majority of the respondents are aware that painless lump is main sign / symptoms of breast cancer and less aware about other sign / symptoms. A few respondents are aware about early detection of breast cancer is possible. Similar findings is reported in other study.<sup>6</sup>

Knowledge and awareness of early detection measures of breast cancer such as breast self-examination (BSE) is also low (25% in the current study). The findings show that few of the participants knew about BSE as an early detection measure, and hardly very few women practice it. It is established that screening by mammography can substantially reduce mortality from breast cancer, especially in women over the age of 50 years.<sup>8</sup>

But this technique is expensive and for this reason difficult to adopt in a country like India as a routine public health measure. A cohort study in Finland and a case-control study in Canada suggested BSE to be beneficial (reduction in breast cancer mortality) at all ages.<sup>9,10</sup> Recently there is a debate on the role of regular self-examination of the breast in preventing breast cancer mortality.<sup>11</sup> However the teaching of BSE can help women to be alert to any abnormal changes in their breasts and seek medical advice immediately. One study carried out in Karnataka has suggested that this can be used as a strategy for creating breast health awareness among women, and female health workers can be trained to teach the women to carry out BSE.<sup>12</sup>

Two thirds of the respondents are aware that breast cancer is curable while most of them thought it is curable only in early stage. Similar findings are noted in a Nigerian study.<sup>5</sup> Very few respondents heard about breast self-examination but in-depth knowledge about it is poor. An opposite finding was noted in a cross sectional study conducted at Mumbai. Most of the participants had good knowledge about breast self-examination and they also knew that it should be done every month, However knowledge about breast self-examination among women increase with their exposure to hospital.<sup>5</sup> In present study,



respondents had less knowledge about mammography, the finding similar to the one observed in Uganda.<sup>13</sup>

The World Health Organization stresses on promoting awareness in the community and encouraging early diagnosis of breast cancer, especially for women aged 40-69 years who are attending primary health care centers or hospitals for other reasons, by offering clinical breast examinations.<sup>14</sup>

The present study revealed that women had certain misconceptions about breast cancer like 'Breast cancer means losing one's breast', 'trauma to breast cause breast cancer', 'Use of Antiperspirants or Deodorants cause breast cancer' and 'Woman with big breast gets breast cancer'. A similar misconception are reported in other studies.<sup>15</sup>

We acknowledge certain limitations of this study: Firstly, we do not have information about women who refused to participate in the study or who were not available at the time of study. This study was done in Vikhroli, a suburban area of Mumbai; the findings of this study could not be generalized to whole of Mumbai. Majority of data was collected from house wife due unavailability of working women so there could be possible selection bias.

## CONCLUSION

In conclusion, this study has shown that though majority of the respondents heard about breast cancer as a disease but they have poor knowledge about risk factors, signs and symptoms and early detection technology. Therefore, it is important to educate women about risk factors, signs/symptoms and early detection technology of breast cancer. Local gynaecologist can play active role in disseminating information about breast cancer.

*Funding: No funding sources*

*Conflict of interest: None declared*

*Ethical approval: The study was approved by the Institutional Ethics Committee*

## REFERENCES

1. Dinshaw K, Rao DG. Tata Memorial Hospital Cancer Registry Annual Report, Mumbai, India. 1999.
2. Nandakumar A, Anantha N, Venugopal TC, Sankaranarayanan R, Thimmasetty K, Dhar M. Survival in breast cancer: a population-based study in Bangalore, India. *Int J Cancer*. 1995;60(5):593-6.
3. Hungarian National Cancer Control Programme. 2006;64.
4. American Cancer Society. Breast cancer: detailed guide. 2015.
5. Ahuja S, Chakrabarti N. Screening Practices Among A group of women in a tertiary care hospital in Mumbai, India. 2009;1(1):1-17.
6. Somdatta P, Baridalyne N. Awareness of breast cancer in women of an urban resettlement colony. *Indian J Cancer*. 2007;149-53.
7. Okobia MN, Bunker CH, Okonofua FE, Osime U. Knowledge, attitude and practice of Nigerian women towards breast cancer: a cross-sectional study. *World J Surg Oncol*. 2006;4(1):11. Available at: <http://www.wjso.com/content/4/1/11>.
8. Tabar L, Gad a, Holmberg LH, Ljungquist U, Group KCP, Fagerberg CJG, et al. Reduction in mortality from breast cancer after mass screening with mammography: randomised trial from the Breast Cancer Screening Working Group of the Swedish National Board of Health and Welfare. *Lancet*. 1985;325(8433):829-32.
9. Gastrin G, Miller AB, To T, Aronson KJ, Wall C, Hakama M, et al. Incidence and mortality from breast cancer in the Mama Program for Breast Screening in Finland, 1973-1986. *Cancer*. 1994;73(8):2168-74.
10. Harvey BJ, Miller a B, Baines CJ, Corey PN. Effect of breast self-examination techniques on the risk of death from breast cancer. *CMAJ*. 1997;157(9):1205-12. Available at: <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1228347&tool=pmcentrez&rendertype=abstract>.
11. Hackshaw AK, Paul EA. Breast self-examination and death from breast cancer: a meta-analysis. *Br J Cancer*. 2003;88(7):1047-53. Available at: <http://www.nature.com/doi/10.1038/sj.bjc.6600847>.
12. Rao RSP, Nair S, Nair NS, Kamath VG. Acceptability and effectiveness of a breast health awareness programme for rural women in India. *Indian J Med Sci*. 2005;59(9):398-402.
13. Elsie KM, Gonzaga MA, Francis B, Michael KG, Rebecca N, Rosemary BK, et al. Current knowledge, attitudes and practices of women on breast cancer and mammography at Mulago Hospital. *Pan Afr Med J*. 2010;5:9.
14. World Health Organization. WHO Screening for breast cancer. 2008; Available at: <http://www.who.int/cancer/detection/breastcancer/en/>.
15. Parsa P, Kandiah M. Breast cancer knowledge, perception and breast self-examination practices among Iranian women. *Int Med J*. 2005;4(2):17-24.

**Cite this article as:** Shinde SD, Kadam SB. Breast cancer awareness among women in Vikhroli: a suburban area of Mumbai, Maharashtra, India. *Int J Community Med Public Health* 2016;3:2281-6.