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**Original Research Article**

# A study to assess the knowledge regarding breast cancer and practices of breast self-examination among women in urban area

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## ABSTRACT

**Background:** Out of all cancers, breast cancer only is responsible for 1.5 lakh cases (10%) of cancer burden in India by 2016. The present study was carried out among women in an urban area with objective to assess knowledge of women in age group 20-60 years regarding causes and risk factors of breast cancer and their practice regarding breast self-examination. An association between the socio-demographic variables and knowledge of women regarding breast cancer and breast self-examination was sought for and an attempt was made to demonstrate individually to each woman included in the study, the correct method of performing BSE.
**Methods:** A community based cross sectional study was conducted. Total 100 subjects were selected by multistage sampling technique. Structured questionnaire were used to test their knowledge about breast cancer and practice regarding BSE.
**Results:** Out of 100 women, 58% had knowledge that breast cancer was the most prevalent cancer among women, 52% knew what breast self-examination is and 28% were practicing breast self-examination.
**Conclusions:** There is a need for developing health education programs about symptoms and early signs of breast cancer with emphasis on the importance of early breast cancer detection. Breast self-examination should be encouraged. The health education programs and mass media education should be targeted towards females in the age group between 20 years and above, ideally those 35 years of age and above. Further research regarding knowledge and practice of women towards breast cancer is recommended.

**Keywords:** KAP, Breast cancer, BSE

## INTRODUCTION

In this era of epidemiological transition where non communicable diseases are on significant rise more so in terms of cancer, stringent efforts are needed to curb this epidemic.[1-7] Breast cancer is amongst the most common cancer in women both in the developed and the developing world whose incidence is increasing specially in the developing world due to increased life expectancy, increase urbanization and adoption of unhealthy stressful lifestyles.[8,9] Age standardised incidence rate in India is about 25.8 per 100,000 women that is roughly 1 in 4000 are females affected.[10]

Breast cancer unlike other type of cancer is an easily screen able cancer, effects an easily visible organ and have an effective treatment [11]. The 5-year survival rate is 85% with early detection whereas later detection decreases the survival rate to 56%.[12] One of the major cause of low survival rate of breast cancer patients in developing country is lack of early diagnosis, inadequate diagnosis or effective treatment. Early diagnosis is aided by early reporting of patients to the health care set up.

Though there is no evidence on the effect of screening through breast self-examination (BSE) but it definitely contributes in early reporting of cases and also the practice of BSE has been seen to empower women, taking responsibility for their own health.[13,14] Therefore, BSE is recommended for raising awareness among women at risk rather than as a screening method.

## METHODS

### *Study area*

The present study was carried out in Dharavi, urban slum area of Mumbai city.

### *Study population*

The study population were women aged of 20-60yrs.

### *Study design and study period*

A community based cross-sectional study conducted during the period from January 2016 to March 2016.

### *Sample size and sampling technique*

Multistage sampling technique was adopted for the study. The first stage involved clustering of the community into zones and three zones were randomly selected and thirty three (33) respondents each were randomly selected from zones 1 and 2, while thirty four (34) respondents were selected from zone 3. Therefore, the sample size was one hundred (100) respondents.

### *Inclusion and exclusion criteria*

All women between the age of 20-60 years in the study area and who gave consent to participate were included in the study and all those women who were terminally ill/ pregnant were excluded from the study.

### *Study tools and standard operative procedure*:

Data for the study was collected using self-designed structured questionnaire (after obtaining written informed consent). It consists of closed and open ended questions that were used to collect data that would meet objectives of the study. The questionnaire was distributed to all respondents, same was interpreted to those being illiterate, and all questionnaires were retrieved from the respondents. The questionnaire had four sections: section one contained socio-demographic information of the respondents, section two contained information on the knowledge of women on breast cancer and breast self-examination, section three contained information on perceptions of women on the causes, risk factors and early signs and symptoms of breast cancer, while section four contained information on the respondents practice of breast self-examination.

All the study subjects underwent clinical breast examination and mammography.

### *Data analysis*

Data collected and analysed by using appropriate statistical methods. Chi square test was used to test association.

## RESULTS

Shows the sociodemographic characteristics of the study group with 38% of the study population belonging to age group 31-40 years. 46% of the study population were Hindu. Most of the study subjects (30%) were having primary level education, were housewives (80%) and married (89%). 68% of the study population belongs to nuclear family. Maximum of the study population were from lower middle class (44%) (Table 1).

Shows that only 7% of the study subjects were having past or family history of breast cancer (Table 2).

A varied picture emerged about the knowledge of signs, symptoms, BSE and risk factors of breast cancer among the study participants. A large percentage of subjects were aware that breast cancer is one of the most prevalent cancer, its occurrence increases with increasing age, it exhibits a hereditary pattern, and is curable if detected early. However, there was less knowledge regarding various risk factors for breast cancer; tobacco/ smoking apparently being the most common cause. A substantial fraction of study subjects were unaware about the various sign and symptoms encountered during breast cancer.

Knowledge regarding breast self-examination showed a mixed result overall. More than half of the respondents (52%) had knowledge of BSE and were aware of its importance but fail to link its importance to breast cancer. Also majority had no knowledge about age and appropriate time for its commencement. Interestingly Health professional were the most common source of knowledge about BSE.

As per the data, despite having knowledge about breast self-examination, significant no. of study subject never resorted to its appropriate practice.

Probability of educated people practising BSE was significantly higher ($p<0.05$) unlike age and socio economic status ($p>0.05$).

On clinical breast examination, 8 subject had right breast pathology and 6 subjects had left breast pathology in the form of lump or mild nipple retraction. However Mammography findings were normal in all these individuals.

**Table 1: Socio-demographic characteristics of the study group.**

| Age (in years) | Frequency | Percentage (%) |
|---|---|---|
| ≤20 | 5 | 5.0 |
| 21-30 | 21 | 21.0 |
| 31-40 | 38 | 38.0 |
| 41-50 | 27 | 27.0 |
| >50 | 9 | 9.0 |
| Total | 100 | 100.0 |
| **Religion** | | |
| Hindu | 46 | 46.0 |
| Muslim | 27 | 27.0 |
| Christian | 16 | 16.0 |
| Others | 11 | 11.0 |
| Total | 100 | 100.0 |
| **Education** | | |
| Illiterate | 17 | 17.0 |
| Pre primary | 9 | 9.0 |
| Primary | 30 | 30.0 |
| Upper primary | 9 | 9.0 |
| Secondary | 22 | 22.0 |
| Senior secondary | 8 | 8.0 |
| Graduate | 5 | 5.0 |
| Total | 100 | 100.0 |
| **Occupation** | | |
| Cook | 1 | 1.0 |
| Business | 3 | 3.0 |
| Maid | 3 | 3.0 |
| Service | 3 | 3.0 |
| Community health worker | 10 | 10.0 |
| Housewife | 80 | 80.0 |
| Total | 100 | 100.0 |
| **Marital status** | | |
| Divorced | 5 | 5.0 |
| Widow | 6 | 6.0 |
| Married | 89 | 89.0 |
| Total | 100 | 100.0 |
| **Type of family** | | |
| Extended | 4 | 4.0 |
| Joint | 28 | 28.0 |
| Nuclear | 68 | 68.0 |
| Total | 100 | 100.0 |
| **Socio-economic status** | | |
| Upper class | 7 | 7.0 |
| Upper middle class | 19 | 19.0 |
| Middle class | 27 | 27.0 |
| Lower middle class | 44 | 44.0 |
| Lower class | 3 | 3.0 |
| Total | 100 | 100.0 |

**Table 2: Past history and family history of breast cancer amongst the study group.**

| Past H/O and family H/O | Frequency | Percentage (%) |
|---|---|---|
| **Present** | 7 | 7.0 |
| **Absent** | 93 | 93.0 |
| **Total** | 100 | 100.0 |

**Table 3: Percentage distribution of women's knowledge level regarding Breast Cancer.**

| Characteristics | Frequency | Percentage (%) |
|---|---|---|
| **Is breast cancer the most prevalent cancer in women** | | |
| Yes | 58 | 58.0 |
| No | 42 | 42.0 |
| Total | 100 | 100.0 |
| **Do you think that breast cancer occurrence increases with age** | | |
| Yes | 62 | 62.0 |
| No | 38 | 38.0 |
| Total | 100 | 100.0 |
| **Do you think that heredity has anything to do with breast cancer** | | |
| Yes | 50 | 50.0 |
| No | 50 | 50.0 |
| Total | 100 | 100.0 |
| **Do you think that breast cancer can be cured if it is detected early** | | |
| Yes | 79 | 79.0 |
| No | 21 | 21.0 |
| Total | 100 | 100.0 |
| **Do you know what are the risk factors for breast cancer** | | |
| Yes | 38 | 38.0 |
| No | 62 | 62.0 |
| Total | 100 | 100.0 |

**Table 4: Percentage distribution of women's knowledge level regarding risk factors of breast cancer.**

| Risk factors | Frequency |
|---|---|
| **Late menopause** | 1 |
| **OCPs** | 2 |
| **Fatty diet** | 2 |
| **Early menarche** | 3 |
| **Obesity** | 4 |
| **Nulliparity** | 6 |
| **Late childbearing** | 7 |
| **Exposure to radiation** | 7 |
| **Alcohol** | 8 |
| **Little or no breast feeding** | 12 |
| **Tobacco/smoking** | 16 |

**Table 5: Percentage distribution of women's knowledge level regarding symptoms and early signs of breast cancer.**

| Characteristics | Frequency | Percentage (%) |
|---|---|---|
| **Any lumps or tumours in the breast that don't hurt** | | |
| Yes | 17 | 17.0 |
| No | 83 | 83.0 |
| Total | 100 | 100.0 |
| **Any change in the breast skin texture/colour** | | |
| Yes | 9 | 9.0 |
| No | 91 | 91.0 |
| Total | 100 | 100.0 |
| **Any change in the breast shape/shape of the nipple or its direction** | | |
| Yes | 8 | 8.0 |
| No | 92 | 92.0 |
| Total | 100 | 100.0 |
| **Any abnormal or bloody discharge from the nipple** | | |
| Yes | 9 | 9.0 |

| | | |
|---|---|---|
| No | 91 | 91.0 |
| Total | 100 | 100.0 |
| **Occurrence of any ulceration on the skin / nipple which doesn't heal** | | |
| Yes | 7 | 7.0 |
| No | 93 | 93.0 |
| Total | 100 | 100.0 |

**Table 6: Percentage distribution of women's highest knowledge level regarding breast self-examination (BSE).**

| Characteristics | Frequency | Percent |
|---|---|---|
| **Do you know what breast self-examination is** | | |
| Yes | 52 | 52.0 |
| No | 48 | 48.0 |
| Total | 100 | 100.0 |
| **Is breast self-examination important** | | |
| Yes | 52 | 52.0 |
| No | 48 | 48.0 |
| Total | 100 | 100.0 |
| **Does BSE helps in early detection of breast cancer** | | |
| Yes | 47 | 47.0 |
| No | 53 | 53.0 |
| Total | 100 | 100.0 |
| **Have you ever performed breast self-examination** | | |
| Yes | 28 | 28.0 |
| No | 72 | 72.0 |
| Total | 100 | 100.0 |
| **The frequency of practicing BSE** | | |
| Daily | 2 | 2.0 |
| Weekly | 2 | 2.0 |
| Monthly | 14 | 14.0 |
| Yearly | 10 | 10.0 |
| Never | 72 | 72.0 |
| Total | 100 | 100.0 |
| **Information source about BC and BSE** | | |
| Internet | 3 | 2.06 |
| Friends | 8 | 5.52 |
| Newspaper | 14 | 9.65 |
| Neighbours | 17 | 11.72 |
| Family member | 26 | 17.93 |
| TV/radio | 31 | 21.38 |
| Health personnel | 46 | 31.72 |
| Total (Multiple responses)* | 145* | 100.0 |
| **At what age should BSE be commenced** | | |
| From 15 years | 16 | 16.0 |
| From 20 years | 11 | 11.0 |
| Above 30 years | 21 | 21.0 |
| At any age | 4 | 4.0 |
| No/or don't know | 48 | 48.0 |
| Total | 100 | 100.0 |
| Appropriate time to perform BSE in pre-menopausal is | | |
| 5-7 days before menstruation | 2 | 2.0 |
| During menstruation | 2 | 2.0 |
| Immediately after menstruation | 4 | 4.0 |
| 5-7 days after menstruation | 28 | 28.0 |

| | | |
|---|---|---|
| At any time | 2 | 2.0 |
| No/or don't know | 62 | 62.0 |
| Total | 100 | 100.0 |

**Table 7: Comparison of breast self-examination (BSE) practice by age, educational level and SES:**

| Variables | Practice BSE | | Do not practice BSE | | P value |
|---|---|---|---|---|---|
| | n | % | n | % | |
| **Age** | | | | | |
| ≤ 20 | 2 | 7.1 | 3 | 4.2 | 0.776$^{NS}$ |
| 21-30 | 6 | 21.4 | 15 | 20.8 | |
| 31-40 | 8 | 28.6 | 30 | 41.7 | |
| 41-50 | 9 | 32.1 | 18 | 25.0 | |
| > 50 | 3 | 10.7 | 6 | 8.3 | |
| Total | 28 | 100.0 | 72 | 100.0 | |
| **Education** | | | | | |
| Illiterate | 3 | 10.7 | 14 | 19.4 | 0.000$^{S}$ |
| Pre primary | 0 | 0.0 | 9 | 12.5 | |
| Primary | 4 | 14.3 | 26 | 36.1 | |
| Upper primary | 1 | 3.6 | 8 | 11.1 | |
| Secondary | 10 | 35.7 | 12 | 16.7 | |
| Senior secondary | 6 | 21.4 | 2 | 2.8 | |
| Graduate | 4 | 14.3 | 1 | 1.4 | |
| Total | 28 | 100.0 | 72 | 100.0 | |
| **Socio economic status** | | | | | |
| Upper class | 4 | 14.3 | 3 | 4.2 | 0.454$^{S}$ |
| Upper middle class | 5 | 17.9 | 14 | 19.4 | |
| Middle class | 8 | 28.6 | 19 | 26.4 | |
| Lower middle class | 10 | 35.7 | 34 | 47.2 | |
| Lower class | 1 | 3.6 | 2 | 2.8 | |
| Total | 28 | 100.0 | 72 | 100.0 | |

## DISCUSSION

A consortium of American medical organizations, including the American Cancer Society, has issued the following recommendation: between the ages of 40 and 49 years, women should undergo a CBE (clinical breast examination) and mammography every year or 2. Women older than 50 years should have an annual CBE as well as a mammogram.[15-17] This study showed that more than 50% of the women were informed about BSE and its importance and its trends with respect to age, heredity and early detection.

A review of the literature reveals low breast cancer literacy with regard to risk factors among Indian women, irrespective of their socio-economic and educational backgrounds, with little correlation between awareness levels and strength of evidence of the risk factors Low levels of awareness were consistently observed for important risk factors such as age at menarche, age at menopause and age at birth of first child in the general population as seen in this study also Women more commonly believed that unhealthy habits related tobacco consumption were more important risk factors than reproductive history, which is a much stronger determinant of breast cancer.[18-21]

There was a significantly low contribution of mass media in imparting the knowledge regarding breast cancer and BSE, highlighting the fact that there should be massive emphasis on prudent utilization of these very important platforms for health education.

When the attitude toward BSE was analysed, it was noted that the majority of the population felt that "all women should do BSE" pointing importance of self-examination in early diagnosis of breast cancer however only 28% of the population actually practicing it appropriately, with literate female having more likelihood of practicing BSE (p=0.000) this finding is consistent with what was seen in a study done by Kumarswamy, Veerakumar et al.[22]

BSE practice didn't show any relationship with age group and socio economic status consistent with the study done by Kumarswamy, Veerakumar et al.[22]

***Limitations***

There were some limitations encountered as its being a cross-sectional study; the results we got here cannot be applied to the entire general population. The age composition of different population is different like-wise education status and socio-economic status is also different for different slum population so these results cannot be applied to all other slum population.

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