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TITLE

Barriers to Breast Cancer Screening in a Cohort of Urban Indian Women.

INTRODUCTION

The global cancer burden is expected to be 28.4 million cases in 2040, a 47% increase from the corresponding 19.3 million cases in 2020. Globally, Breast cancer is the most commonly diagnosed cancer and the leading cause of cancer death among females, followed by colorectal and lung cancer for incidence, and vice versa for mortality.¹ Breast cancer has the highest incidence rate (13.5%) and death rate (10.6%) in India.²

However, early detection of breast cancer has better chances of survival and also reduces treatment costs.³ The 5-year survival rate with early detection is approximately 85% whereas it is reduced to 56% with late detection.⁴ Unfortunately, over 70% of the women present in advanced stages of breast cancer which is the main cause of high mortality among these patients. Advanced stage presentation of breast cancer occurs mainly due to the non-existent breast cancer screening program, and non-participation of women if any such program does exist.⁵

Breast Cancer Screening is defined as testing women before any evident symptoms appear, to detect and treat cancers or pre-cancers.⁶ Breast Self-Examination (BSE), Clinical Breast Examination (CBE) and Mammography are some of the screening techniques used for Breast cancer.⁷ In India, Breast cancer screening is part of the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular diseases, and Stroke (NPCDCS).⁸ Its guidelines are used for the screening of different cancers in eligible men and women⁹ but there is still no existing National Screening Program.⁸

Notably, India's National Family Health Survey-5 (NFHS-5) data reveal that NPCDCS has not taken off in any state. According to NFHS-5 2020-21 data on Breast Cancer Screening, The state with the highest percentage coverage for breast cancer screening was Mizoram, with 2.7% women screened.⁹ Only 0.4% of women between the age of 30 and 49 years had ever undergone a breast examination for breast cancer, both in rural and urban areas of Uttar Pradesh.¹⁰

According to a recent report from National Cancer Registry Programme (NCRP) India, The highest burden of breast cancer has been observed in metropolitan cities.¹¹ So, it becomes essential to analyse various reasons for women to not avail of existing screening facilities even after being aware of the high mortality associated with advanced stages of breast cancer. Identification of barriers to breast cancer screening can be very helpful in improving morbidity and mortality status.

In a nutshell, lack of awareness has been shown to be one of the biggest barriers to screening and early detection of breast cancers¹² therefore it is crucial to assess existing levels of cancer

awareness in urban Indian women. Moreover, currently, there is a significant gap in the literature with respect to the barriers that affect screening practices amongst Indian women. Hence, this study aims to fill in this gap by assessing various factors that affect screening practices amongst urban women in India. And, considering very much lower screening rates for breast cancer in India, in this study, we also aim to identify factors that act as barriers to breast cancer screening in urban Indian women.

OBJECTIVES

Primary objectives:

- To evaluate breast cancer screening practices in urban Indian women.
- To identify barriers of screening for breast cancer in a cohort of urban women.

Secondary objectives:

- To assess various factors affecting screening practices.

METHODOLOGY

Type of Study

Observational study

Study Design

The study will be a survey-based, cross-sectional study.

Study Setting & Population

The Participants for this study will include urban Indian women living in Uttar Pradesh.

The definition of an urban area is as follows¹³;

1. All places with a municipality, corporation, cantonment board or notified town area committee, etc.
2. All other places which satisfy the following criteria:
 - a) A minimum population of 5,000;
 - b) At least 75 per cent of the male main working population engaged in non-agricultural pursuits;
 - c) A density of population of at least 400 persons per sq. km

Inclusion criteria:

- I. Indian women living in urban areas.
- II. Women consenting for participation in this study.

Exclusion criteria:

- I. Women not consenting for participation in this study.
- II. Women not completing the questionnaire (<70%).

Sample Size

The sample size calculated for this study is 385 participants with a 95% confidence level and a 5% margin of error.

Sample size was calculated using the formula:

$$\text{Sample Size} = N * [Z^2 * p * (1-p)/e^2] / [N - 1 + (Z^2 * p * (1-p)/e^2)]$$

where N = Population size,

Z = Critical value of the normal distribution at the required confidence level,

p = Sample proportion,

e = Margin of error

Data Collection

Data shall be collected by administering a comprehensive self-designed and validated, structured questionnaire via online as well as offline medium. A consent form will also be included with the questionnaire. After explaining the study's purpose and its benefits for women's health, participants' written and verbal consent will be obtained. Questionnaire has been prepared by using the information on breast cancer and screening from the literature. Questionnaire includes the socio-demographic variables (age, occupation, education, marital status) of the participants, and Cancer screening related questions (about Breast Self-Examination, Clinical Breast Examination and Mammography).

STATISTICAL ANALYSIS

After data collection, the collected data will be first organized and tabulated in Microsoft excel. The data obtained will be analysed with the help of IBM SPSS (Statistical Package for the Social Sciences) Software Version 24 for which institutional access is available. Chi-square test will be used to correlate various parameters affecting breast cancer screening practices.

ETHICAL CONSIDERATIONS

We have submitted the proposal for ethical clearance to the Institution's Ethics Committee and it will be attached at the time of report submission. Participation in this study will be voluntary. Data will be collected only after obtaining participants' consent and data will be kept confidential.

IMPLICATIONS

1. This study will help us enhance awareness about screening programmes among women.
2. This study may help us in the development and implementation of well-organized screening programmes in India as well as in strengthening existing screening facilities.
3. Identifying barriers is crucial in improving women participation in breast cancer screening programs which would ultimately result in detecting early-stage cases and lowering the treatment cost.
4. Identification of barriers to breast cancer screening in a cohort of urban Indian women would be very helpful in reducing morbidity and mortality as well as disease burden.
5. This study can provide better insight on how to eliminate various barriers to improve cancer screening rates in India.

REFERENCES

1. Sung H, Ferlay J, Siegel R, Laversanne M, Soerjomataram I, Jemal A et al. Global Cancer Statistics 2020: GLOBOCAN Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 Countries. *CA: A Cancer Journal for Clinicians*. 2021;71(3):209-249.
2. India Factsheet (GLOBOCAN, 2020); <https://gco.iarc.fr/today/data/factsheets/populations/356-india-fact-sheets.pdf>
3. Sankaranarayanan R, Ramadas K, Thara S, Muwonge R, Prabhakar J, Augustine P et al. Clinical Breast Examination: Preliminary Results from a Cluster Randomized Controlled Trial in India. *JNCI Journal of the National Cancer Institute*. 2011;103(19):1476-1480.
4. Gore C, Kalliguddi S, Sharma S. Knowledge, attitude, and practice of breast self-examination amongst female IT professionals in Silicon Valley of India. *Journal of Family Medicine and Primary Care*. 2019;8(2):568.
5. Singh S, Shrivastava J, Dwivedi A. Breast cancer screening existence in India: A nonexisting reality. *Indian Journal of Medical and Paediatric Oncology*. 2015;36(04):207-209.
6. Barba D, León-Sosa A, Lugo P, Suquillo D, Torres F, Surre F et al. Breast cancer, screening and diagnostic tools: All you need to know. *Critical Reviews in Oncology/Hematology*. 2021;157:103174.

7. IARC Working Group on the Evaluation of Cancer-Preventive Interventions. Breast cancer screening. Lyon (FR): International Agency for Research on Cancer; 2016. 2. Screening Techniques. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK546557/>
8. Bhan A, Jayaram J. Screening, Self-Examination and Awareness in Breast Cancer. Breast Cancer. 2022;:587-600.
9. Subba S. Too little too late? Or a small step in the right direction? - Cancer screening in India. Indian Journal of Community and Family Medicine. 2021;7(2):71.
10. NFHS-5 state fact sheet Uttar Pradesh, [http://planning.up.nic.in/Go/SDG/Uttar Pradesh NFHS-5%20fact%20sheet.pdf](http://planning.up.nic.in/Go/SDG/Uttar%20Pradesh%20NFHS-5%20fact%20sheet.pdf)
11. Mathur P, Sathishkumar K, Chaturvedi M, Das P, Sudarshan K, Santhappan S et al. Cancer Statistics, 2020: Report From National Cancer Registry Programme, India. JCO Global Oncology. 2020;(6):1063-1075.
12. Mascara M, Constantinou C. Global Perceptions of Women on Breast Cancer and Barriers to Screening. Current Oncology Reports. 2021;23(7).
13. Census of India 2011 Urban Agglomerations and Cities, https://censusindia.gov.in/2011-prov-results/paper2/data_files/india2/1.%20data%20highlight.pdf