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# What are the Barriers to Increase Breast Cancer Screening in India

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## Abstract

**Objective:** In India, the screening rate for breast cancer is significantly lower than other countries such as the USA or UK or Australia, leading to more than 68% of breast cancers being detected at stage 3A or later. This paper analyses the reasons for said screening rate being relatively low.

**Methods:** 6 previous papers written on screening barriers to breast cancer were inspected and analysed. A study was conducted by sending it on online forums to a random sample of residents of India. The respondents were female. Their responses are tabulated below:

[https://docs.google.com/spreadsheets/d/e/2PACX-1vQxrcbK7uCck-njjk\\_6ps8UXcpDGa52jCmRZJ8qrxH9oqNwSzPskW3tespSy5vVsRfyAkoinRkJZotO/pub?gid=781555099&single=true&output=pdf](https://docs.google.com/spreadsheets/d/e/2PACX-1vQxrcbK7uCck-njjk_6ps8UXcpDGa52jCmRZJ8qrxH9oqNwSzPskW3tespSy5vVsRfyAkoinRkJZotO/pub?gid=781555099&single=true&output=pdf)

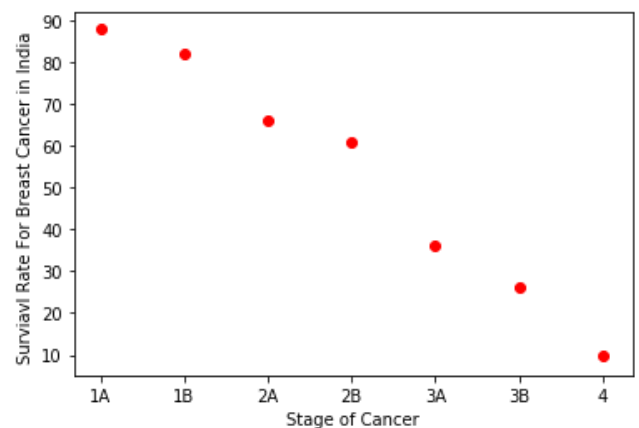
**Results:** The majority of the women surveyed felt that screening was not necessary and hence did not undergo breast cancer screening; however, women surveyed also felt that they were afraid of being diagnosed with breast cancer, screening seemed too expensive an option, screening procedures were too expensive, and that they were afraid of the radiation

**Conclusion:** Having identified a few of the multiple barriers to breast cancer screening in the Delhi NCR region, a scalable model for a population level organised screening project must be devised which may overcome maximum number of these barriers in the interest of incrementing the screening rate, and hence survival rate for breast cancer in India

**Keywords:** Breast cancer; Cancer screening

## Introduction

As shown by many previously conducted studies, the stage of detection, or any cancer for that matter, has a great degree of influence on the survival rate for patients.



**Figure 1:** The survival rate for cancer rapidly declines by an increase in the stage.

Clearly indicated by the graph above, the survival rate for cancer rapidly declines by an increase in the stage.

In India, the survival rate for breast cancer patients is a mere 50-60% when compared to that of developed countries such as the United States of America, United Kingdom, Australia, where the breast cancer survival rates are as high as 80%. This can be attributed to significantly lower screening rates prevalent in India. There are a few reasons for the lower survival rate in India:

- Lack of awareness about breast cancer and the signs to detect it
- Unavailability of proper medical facilities and infrastructure to provide screening facilities
- Expensive procedures to screen for breast cancer
- No large-scale screening program for breast cancer in India
- Societal stigma in India associated with breast cancer

## Discussion

### General respondent data:

**Participant Data (Age):** Ø22.6% were of age 18-20

Ø1.9% were of age 20-30

Ø16% were of age 30-40

Ø39.6% were of age 40-50

Ø13.2% were of age 50-60

Ø5.7% were of age 60-70

Ø0.1% were of age greater than 70

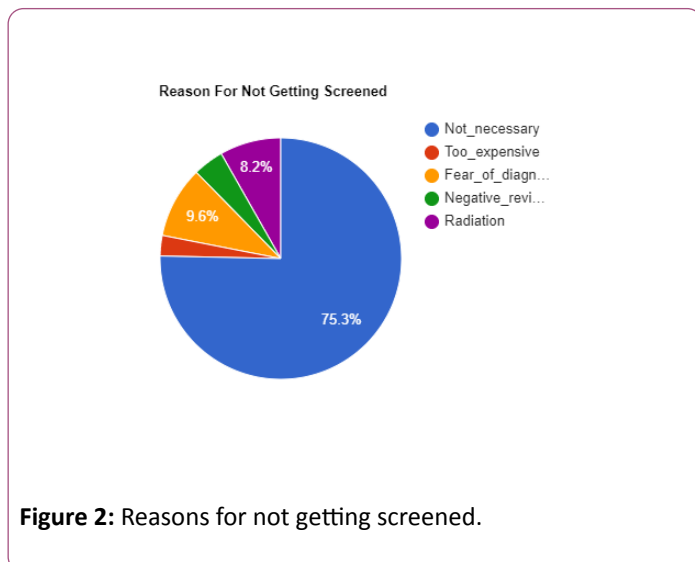
**Participant Data (Monthly household income in INR):**Ø28.3% were of the group <2 lakhs

Ø27.4% were of group 2 lakhs-5 lakhs

Ø17% were of the group 5 lakhs to 8 lakhs

Ø27.4% were of the group >8 lakhs

**Other Participant Data:** Among those surveyed, 39% of respondents had got screened while 61% of them had not screened. Among those who had not got screened, these were the primary reasons.



**Figure 2:** Reasons for not getting screened.

- Blue segment: Did not consider screening to be necessary
- Red segment: Screening was too expensive
- Yellow segment: Was afraid of being diagnosed with breast cancer
- Green segment: Heard negative reviews about screening from someone else
- Purple segment: Was uncomfortable with the level of radiation during conventional screening procedures

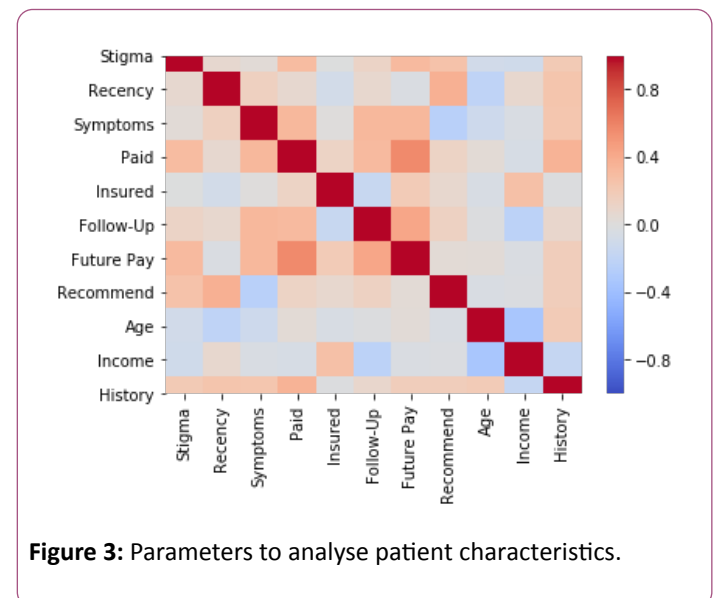
Hence the majority of participants felt that screening was not necessary, which will be addressed in the awareness section of this paper.

## Correlation Analysis for Different Parameters

### For those who have got screened

The parameters we will analyse are age, monthly household income, whether or not the participant showed symptoms of breast cancer or not, previous family history of breast cancer, how recently the participant had gotten screened, the amount

they paid to get screened, whether or not they recommended screening to others, their perception of societal stigma around breast cancer, how much they would be willing to pay in the future to get screened, how often were they recommended follow-up screening, and whether or not their screening was covered for by insurance or paid by employers. Do note that this analysis is only corresponding to the data for those who had gotten screened for breast cancer



**Figure 3:** Parameters to analyse patient characteristics.

- How recently a respondent had gotten screened and whether or not they recommended it to someone else have a strong positive correlation. This may be due to improvement in screening facilities, realising the need to spread awareness to screen for breast cancer and the general increase in screening rates over the past few years
- Due to moderate positive correlations between whether or not a person showed symptoms of breast cancer, how much they paid for getting screened, and how much they would be willing to pay next time, we can infer that seeing tangible symptoms of breast cancer development may lead to people being willing to pay more to get screened
- Additionally, those with symptoms were recommended follow up screenings more recently compared to those who did not exhibit symptoms. This may be due to the symptoms being identifiable at a later stage and hence requiring more regular screenings to be affirmed as breast cancer
- Those with familial histories of breast cancer also paid higher, again possibly due to the prospective patients being willing to pay more due to them being at a higher risk of acquiring breast cancer
- Also, those who paid more currently are also much more likely to pay more in the future to get screened for breast cancer, indicated by a strong positive correlation between the two factors. This may indicate higher levels of awareness about regular screening and its necessity or a satisfactory screening experience. The latter can be quantitatively supported since 59.6% of respondents who had gotten screened indicated no problem in the screening procedure or experience

### For those who have not got screened

For this category, the parameters we will inspect are age, monthly household income, previous familial history of breast cancer, awareness about breast cancer development without exhibiting any symptoms, how much stigma they perceive around breast cancer to be prevalent around them, whether or not a participant has shown symptoms, and how much they would be willing to pay to get screened

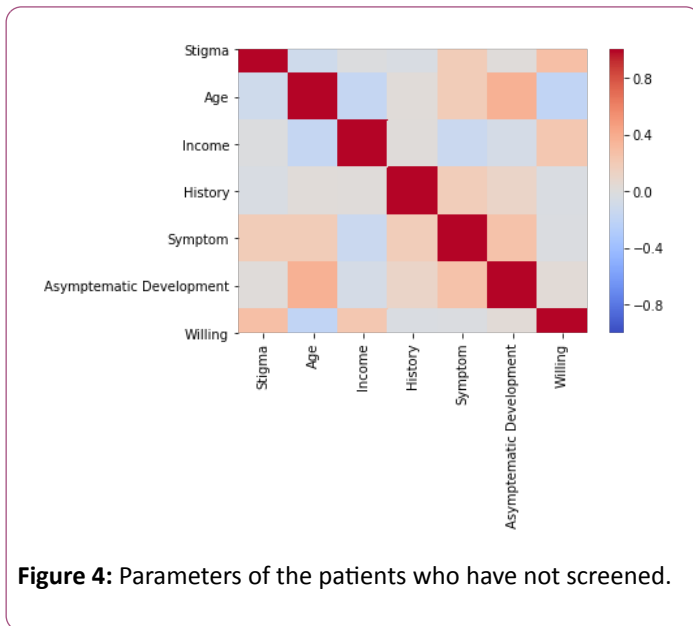


Figure 4: Parameters of the patients who have not screened.

- Among those who have not gotten screened yet, age and knowledge of asymptomatic development of breast cancer have a strong positive correlation, indicating that the overall lower screening rate among the younger demographic may be due to them not considering it necessary since they might be relatively unaware about asymptomatic tumour development
- As expected, income and amount one is willing to pay to get screened have a positive correlation. Unexpectedly though, it's of a low degree, indicating that the difference between the amounts that someone of a household income of Rs 8 lakhs a month and someone of a household income of Rs 2 lakhs a month is not all that different

### Lack of Awareness

The lack of awareness about breast cancer ranges from lack of awareness about its prevalence to a lack of awareness about the necessity of being screened to a lack of awareness about to a lack of awareness about early detection

- Among those surveyed, only 41% of people affirmed to know of breast cancer developing without showing any symptoms. Majority of the respondents were either unaware of breast cancer developing without showing any symptoms (44.6%) or did know that it developed without symptoms, but did not consider it to be of great significance (14.5%). These rates are reflected in the greater population too, where more than 70% of breast cancer cases are diagnosed in stage III or later

- Additionally, of the people we surveyed, 74.6% of the people did not consider screening to be necessary and hence did not get screened

### Psychological Barrier

Another aspect to consider when analysing why the screening rate for breast cancer in India is so low is that women may face psychological barriers when coming to terms with the fact that there might be a chance of them being diagnosed with breast cancer. Firstly, their knowledge of breast cancer survival rates prevalent would be very low, and hence might be deterred from wanting to be diagnosed with such a deadly disease. Additionally, in Indian society even today, many women feel that breast cancer as an issue is highly stigmatized, and hence they might not feel at ease to discuss the probability of getting screened and seek out the necessary support to overcome the mental blockade of knowing of the high mortality rate of the disease. Close to 9.6% of respondents who did not undergo screening stated fear of diagnosis as the primary reason for not having gotten screened yet.

When asked if they felt a certain amount of stigma associated with breast cancer in society today, these were the responses:

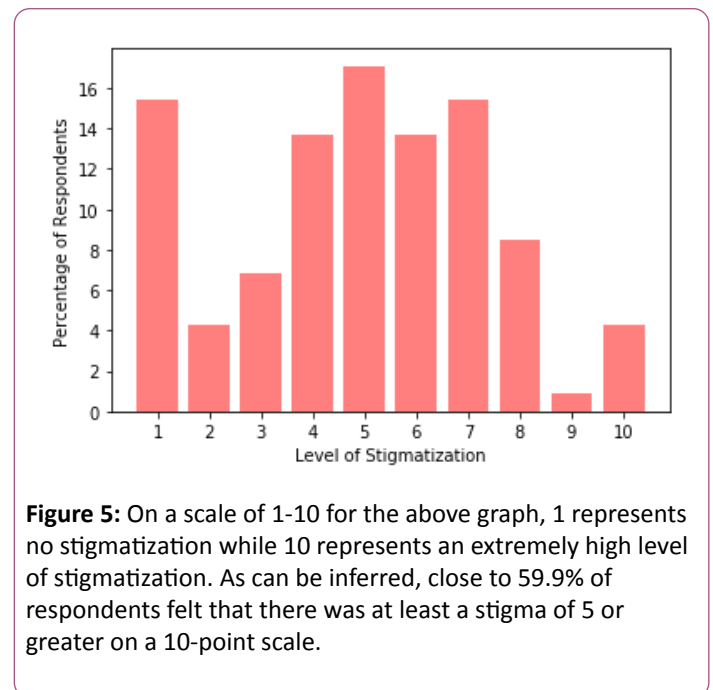


Figure 5: On a scale of 1-10 for the above graph, 1 represents no stigmatization while 10 represents an extremely high level of stigmatization. As can be inferred, close to 59.9% of respondents felt that there was at least a stigma of 5 or greater on a 10-point scale.

### Financial Barrier

- In our study conducted, the majority of the participants had a high income and hence did not state a lack of finances as a reason for not getting screened. However, there were participants who stated a lack of finances preventing them from getting screened. These were 3% of the group which had not gotten screened yet
- Additionally, all the participants who had shown symptoms of breast cancer but did not get screened cited screening being too expensive as the reason. Also, all of these participants

belonged to the <Rs 200000 per month of household income group

## Overdue in Screening

- According to Dr Mathangi J, a radiation oncologist at BGS Global Hospitals, women should start self-examination every month, seven days after their period (because the breasts may be tender before that), from the age of 20. Post-menopausal women or those who do not have periods for any other reason can fix a day for self-examination each month
- Additionally, according to the American Cancer Society, women over the age of 40 should undergo annual mammography screenings to detect signs of breast cancer developments
- In our study conducted, 48.9% of the women were not recommended follow-up screening at all, which may not be beneficial since the risk of developing breast cancer increases significantly with age, and regular screening to identify the same would be necessary
- Additionally, 6.9% of respondents have advised follow-up screening every 10 years or more frequently. This advised time span of 10 years might be too long a period, which may allow a tumour to develop in the interim period without being screened until it has reached a fatal later stage

## Recommendations

- To counter the lack of awareness and stigmatization previously discussed, mass media infomercials may help make a change. With over 100 million television viewers in urban India, and approximately 64% of Indians listening to a radio FM station at least once a day, awareness about breast cancer symptoms and how to detect them, the necessity for screening/early detection, and that breast cancer can develop while being asymptomatic, till it reaches a later stage where it might be fatal. These media infomercials can also be greatly helpful in sensitizing the population to breast cancer as a whole, paving the way for progress to overcome certain psychological barriers women may face preventing them from getting screened
- For trying to increase breast cancer screening on a population level, the implementation of breast cancer blood-based markers to detect progesterone receptors and estrogen receptors can be used, one example of such a blood-based marker test is the CA 15-3 test. This test costs around Rs 1500 to conduct in most labs in the NCR region, which would hence place it perfectly in the price bracket that most respondents

would be willing to pay to get screened. Additionally, such a test would omit the problem of patients being deterred from a test due to its invasive nature or radiation levels, while also providing a more scalable model for a population level screening project

- To help financially aid the people who may deem screening to presently be too expensive, there should be an aid in the forms of government funds created to help screening programs across diseases. Presently, the major funds created are for treating fatal diseases once they have been diagnosed. However, as numerous studies previously have shown, the cost of treatment of breast cancer detected at stage 3B can be up to 3.6 times the cost of treatment of breast cancer detected at stage 1. Hence the provisioning of such a fund will allow a lesser burden financially since the cost of treatment of most diseases is significantly lower when detected at an earlier stage
- Currently, in India, there is no organised mass breast cancer screening program. The creation of such a program will sensitize the population to the issue, achieve better screening rates, both directly from the screening program and indirectly from the destigmatization of the issue coupled with better financial backing for those seeking screening services
- For those who have undergone screening, more regular follow up screening should be prescribed to account for the growing risk of developing breast cancers with the increase in age

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