Mammographic Screening or Breast Cancer Awareness? Time to Ponder

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Abstract Breast cancer in India is becoming the leading cause of cancer-related mortality in urban women. In developed countries, the mortality from breast cancer has decreased in the past few years attributable to better awareness of disease, screening programs, early detection and more effective treatment available. Although widely used, the screening programs running in the western countries have been a point of criticism in the recent years as they lead to increased healthcare cost and detection of otherwise benign and clinically insignificant breast lesion (both benign and malignant). Also in a developing country like ours where the awareness about breast cancer among the ladies is itself poor, whether screening is feasible and cost-effective is a matter of ongoing debate. We conducted this literature review to ascertain the importance of breast cancer awareness, breast self-examination, and clinical breast examination as effective screening tools in a resource deficient country like India.

Keywords Breast cancer · Screening · Breast self-examination · Mammogram

Review

India reports about 100,000 cases of breast cancer annually, with an estimated rate of increase of 3% per year [1]. Breast

cancer ranks as the most common cause of cancer mortality in women, becoming a major cause of concern [2].

Many countries, especially developed nations, have witnessed a decrease in mortality from breast cancer in the past few years attributable to better awareness of disease, screening programs, early detection, and more effective treatment available. However, which factor contributes maximum to an improved outcome is a matter of ongoing debate. The scenario in developing countries is different where there is a lack of awareness and health care facilities.

Most of the screening programs exist in the western countries like the UK and USA. The American College of Surgery (ACS) recommends that women with an average risk of breast cancer should undergo regular screening mammography starting at age 45 years with women aged 45 to 54 years undergoing annual mammogram and older ladies undergoing biennial screening. They suggest that women should continue screening mammography as long as their overall health is good and they have a life expectancy of 10 years or longer [3]. Myers et al. stated that among women of all ages at average risk of breast cancer, screening was associated with a reduction in breast cancer mortality of approximately 20% [4].

Since then, various studies and reviews have actually questioned the usefulness of mammogram as a screening health tool in terms of reduction of mortality. A Cochrane review carried out in 2011 suggested that there is a 30% risk of over diagnosis and treatment including surgeries, radiotherapy, and chemotherapy. Moreover, it has led to increased anxiety and stress levels among the ladies and their family members. In an average, ten women have to undergo unnecessary tests before one woman is diagnosed with breast cancer. Hence, the review finally concluded that routine mammographic screening might do more harm than benefit. The Nordic Cochrane collection 2013 stated that there is a need to reassess whether universal mammographic screening is

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useful as the “chance that a woman will benefit from attending screening is small at best and ten times smaller than the risk that she may experience serious harm in terms of over diagnosis.” They stated that declining breast cancer mortality is mainly because of improved treatment and breast cancer awareness [5].

However, it is worthy to note here that the Cochrane review suggested that the improved rate of mortality is in part due to increased awareness among women about the disease. Also, the Breast Global Health Initiative has stressed upon and recommended awareness-based early detection as an intervention for improving breast cancer survival in low- and middle-income countries [6].

Hence, the question arising in our minds is whether the Indian women are well aware about the disease and carry on self-breast examinations to detect any early change in their breast or identify the alarming symptoms and signs to seek any medical care?

Gadgil et al. studied the awareness about breast cancer in middle class urban women in Mumbai and found that majority of the women were aware about cancer but awareness about symptoms and signs was poor. Women were willing to accept more information about cancer and those with higher awareness scores were more likely to seek medical help. They concluded that organized programs giving detailed information about breast cancer and its symptoms are needed and women from all income categories need to be encouraged for positive change towards health seeking [7]. Dey et al. conducted a study in Delhi, the national capital of India, to assess women's awareness regarding the perceptions, signs and symptoms, risk factors, prevention, screening, and treatment of breast cancer. The study included 2017 women with little more than half being graduates and employed. They found that almost 70% of the study population considered breast cancer to be a relatively uncommon disease in India and more than three fourths of women believed that it presents with a lump. More than half of the women did not know that it could have presenting features apart from breast lump. Although almost all women were aware of the importance of early detection of disease, only half of them were aware of clinical breast examination and even lesser (41.2%) were aware of breast self-examination methods. Surprisingly, even though most were aware of breast cancer, only one third of the women performed breast self-examination. Only a meager (7% approximately) underwent mammography or clinical breast examination in their lifetime. It was also seen that the awareness increased as the age, literacy levels, and socioeconomic standards increased. Surprisingly, increased visit to health care providers did not increase the awareness about the disease reflecting the lack of initiative among the health care providers to spread knowledge and information about prevention and early detection of breast cancer. The relatively higher level of awareness and self-examination practices in this study (as

compared to other studies from the country) may stem from the fact that a significant number of the study population were graduates and self-employed living in a metropolitan city [8]. This study also brings to notice that almost 80% of women believed that alternative health care modalities like yoga/healthcare could bring about a cure of the disease. While almost 90% of the ladies responded that they would seek advice from an allopathic doctor in case they detected themselves with a lump, many times the earlier mentioned belief in alternative systems of medicine providing them cure is a reason for delayed presentation of the lady to doctor as they had spent significant amount of time exploring other treatment options.

In another study conducted by Siddharth et al. at MGIMS Wardha on 360 women without any history of breast cancer or undergoing mammogram, it was noted that almost 80% of women did not have any knowledge about breast cancer, while in the remainder group friends and relatives constituted the most common source of information. One third of their study population had not received any formal education. Although awareness about disease increased as the literacy and socioeconomic status increased, none of the women were aware of BSE and had never done the same. All of them believed that CBE was the only method of screening for breast cancer [9].

Various studies have been conducted which assessed the baseline knowledge about various aspects of disease and then conducted dedicated awareness program to dissipate knowledge and teach BSE to bring about a behavioral change in women motivating them to adapt BSE. Some of them assessed the impact of their educational intervention programs. Rao et al. conducted a similar study to assess the acceptability and effectiveness of breast health awareness program in rural India. They did a community-based non-randomized educational interventional study over 1 year employing auxiliary health nurses (ANM) and field workers in a village in southern India. Only 16.4% of women were aware of BSE, and even they had never practiced the same. However, all of the women were willing to receive information regarding various aspects of breast cancer. After the awareness program conducted by them, post-test response (done using six knowledge-based questions pertaining to the risk factors for breast cancer, the importance of early detection, available screening modalities, and frequency of BSE) showed statistically significant improvement suggesting an overall improvement in disease awareness. Nearly 93% of women performed BSE post-awareness program which dropped to 89.5% after 3 months. This study along with some others have shown that forgetfulness and getting busy with daily chores remain the most important reason for lack of initiative to do regular BSE in women aware of it [10]. Gupta et al. also studied the awareness and practice regarding BSE in

women and assessed the impact of health education on awareness and practice of BSE in a semi-urban population in Madhya Pradesh, India. They interviewed 1000 women and only 16% of them had heard of BSE while none practiced it. Awareness was more with better literacy levels and socioeconomic status. However there was a 43% improvement in awareness after the intervention. What was worrisome was that almost 9% of these women had not started practicing BSE even after gaining knowledge. Forgetfulness and lack of time were the main hurdles in adopting the behavioral change [11].

Even today in our country, the breast surgeon attends to a large number of locally advanced breast cancers in her/his clinic. The widespread use of a screening tool like mammogram (having a questionable benefit) in a resource-limited country like ours does not seem to be a justifiable or practical option. In such a scenario, the outcome and disease specific mortality cannot be brought down till the population is made aware of the disease. Hence, early diagnosis and treatment can be achieved only by improving health awareness and running awareness programs. Rajaraman et al. have also stated that in a resource-limited country like ours, mammography should be a diagnostic tool primarily for symptomatic breast disease. For breast cancer prevention/early diagnosis, awareness and education supplemented with clinical breast examination should be promoted [12].

There is an unfelt need to increase awareness regarding the disease and need for breast self-examination as well as clinical breast examination. Along with disease specific information, there is a dire need to make ladies have self-realization of the importance of prioritizing their own health. These can be achieved by organizing small group awareness programs at various work places, colleges, and at village level. The field workers and ANMs should be involved in doing the same at village level and primary as well as community health care level. Abuidris conducted screening program using local volunteers who screened women clinically to detect breast ailments and conducted awareness programs in rural area of Sudan. They concluded that screening program using local volunteers could increase the detection of breast cancer in asymptomatic women in low-income rural communities [13]. Information may also be spread by using the mass media in all forms (television, radio, newspapers, magazines) to spread the message to all far and near. Moreover, chapter on screening and prevention of common diseases including breast cancer can be incorporated among the curriculum of high school education. This has two-fold advantage by targeting the young generation as well as using them as mediators for passing the information to their parents and other family members who might not be aware or even educated. With regards to clinicians, they should make it a responsibility to teach BSE to all ladies visiting them for any ailment and

emphasize the need for screening clinical breast self-examination.

In our country, there are hardly any formal breast cancer awareness programs with the result that the breast surgeons are bearing the brunt of treating mainly locally advanced disease, large fungating lesions, and metastatic disease. Due to late presentation, the option of breast conservation is not feasible most of the times and the lady ends up having a mastectomy causing further psychological and emotional stress. Hence, it is time to have focused breast awareness campaigns to educate the ladies and improve the outlook of this disease.

Conclusion

Breast cancer awareness is lacking among Indian women and most of the ladies do not perform breast self-examination. Mammographic screening is associated with its own drawbacks and improving breast cancer awareness, practicing breast self-examination, and regular clinical breast examination may be effective screening tools in a resource deficient country like India.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

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