

Original Research Article

Utility of augmented breast self-examination as an education and screening tool in Rural India for early detection of breast cancer

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ABSTRACT

Background: Breast cancer contributes 19-34%, the percentages vary according to the region. There is an immense need for the structured breast cancer screening, which should start with education of breast self-examination (BSE). However due to poor literacy and education, we thought of augmenting the same (aBSC) with use of hand held device across various camps and compared with clinical breast examination (CBE) and conducting feasibility study.

Methods: Data from screening camps between 2018-2020 using standardized AV tools (15 minutes duration) were analysed followed by a question answer section to elicit the understanding with 20:1 random check. For BSE and aBSE we did verification for the understanding and adoption of techniques as per instruction manual. The participants were observed and supervised by trained personal during the process followed by CBE. The results BSE, aBSE and CBE were documented.

Results: We trained 7214 women 2018-2020. Of the total trained persons, 93.8% of women understood accurately. aBSE was done for 1085. Comparison was done between the aBSC and CBE. aBSE could detect 92.6% of all the lumps identified by CBE, which is much better than 68% of BSE. There are 23.4% more suspicious lumps were unearthed after aBSE after conventional BSE. Of all the camps we detected 356 new lumps and malignancies were confirmed in 142 participants, which indicated high impact of such training programs in Rural India.

Conclusions: BSE and aBSE are quite useful in clinical detection of lump and is easy to implement. With detection rate of 1.9%, which is quite high especially in the rural areas where medical facilities are poor, we feel that aBSE can be adopted in large scale and is well accepted among rural women and can improve on conventional breast self-examination and is comparable with clinical breast examination.

Keywords: Breast cancer, Screening, Self-examination

INTRODUCTION

In India cervical cancer is the leading cause of the women malignancies followed by breast. Breast cancer contributes 19-34%, the percentages vary according to the region.¹⁻⁴ The reasons for this variability are many including but not limited to lifestyle, lack of awareness

and other cultural reasons. High number of patients (approximately 69%) with breast cancers presenting in locally advanced or metastatic setting up front due to lack of awareness or proper structured screening methodology.

BSE is easy, cost effective and proven way for early detection.⁴⁻⁷ Early detection of BC by population-based

screening programs would be a potentially useful approach for controlling the disease and reducing mortality.⁸ Periodical mammograms, CBE and monthly BSE is crucial to detect BC at an early stage.^{10,11} With recent technical advances, which are simple to use, we used indigenously developed device for aBSE and thought of exploring the feasibility of the same and compare with conventional BSE and CBE.⁹ Despite the benefits associated with BSE, few women regularly perform it and many do not even know how to perform it. There is also evidence that women are more likely to perform BSE effectively when taught by physicians or a nurse.¹²⁻¹⁴

The purpose of this screening program was to train women for BSE in health camps and feasibility and comparison study of aBSE versus BSE versus CBE in Rural Indian women.

METHODS

As a part of the mass screening and community outreach clinics of various hospitals and NGOs significant data was collected and the same was compiled. Standardized AV tools (15 minutes duration) were prepared and used to educate the volunteers followed by a question answer

section to elicit the understanding with 20:1 random check. For BSE and a BSE we did a verification for the understanding and adoption of techniques as per instruction manual. The participants were observed and supervised by trained personal during the process followed by CBE. The results BSE, aBSE and CBE were documented.

RESULTS

We trained 7214 women over 3 years period for BSE across 48 camps between 2018-2020. The detailed split was given in the Figure 1 for the demographics. Upon evaluation 93.8% of women understood accurately. However after validation check it was felt necessary to retrain 18% as per their perception. aBSE was done for 1085 (15% approximately) subjects. Comparison was done between the aBSC and CBE for the population and we could conclude that aBSE could detect 92.6% of all the lumps identified by CBE, which is much better than 68% of BSE. There are 23.4% more suspicious lumps were unearthed after aBSE after conventional BSE. Of all the camps we could detect 356 new lumps among participants, which were referred for mammographic evaluation at medical centers and malignancies were detected in 142 participants, which indicates high impact of such training programs in Rural India.

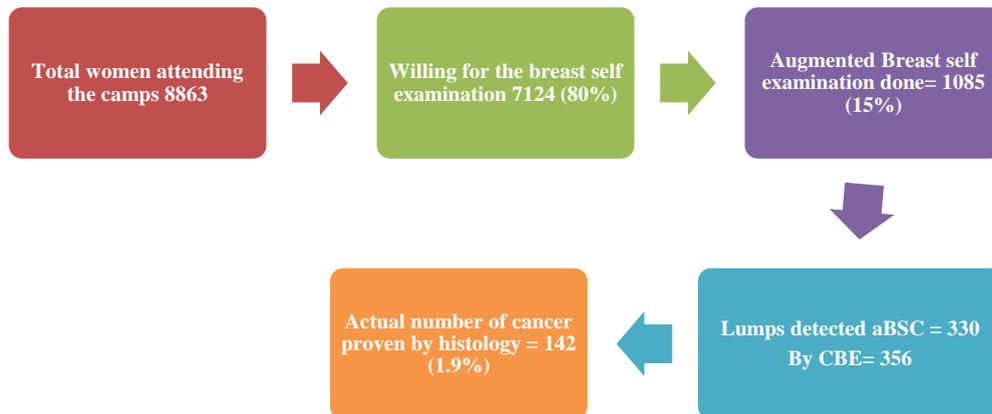


Figure 1: Flow of the 48 camps conducted between 2018-2020.

DISCUSSION

BSE provides an inexpensive method for early detection of breast tumors, thus knowledge and consistent practice could protect women from severe morbidity and mortality due to breast cancer. Several studies have been done, confirming the importance of awareness about breast cancer and screening methods.²⁻⁶

This modified and advanced screening program was done as multiple pilot projects to assess the practice of BSE after training as well the impact on the early detection. In view of the vast population of India residing in rural region and the structure of the primary healthcare system

we chose the rural camps to implement the protocol. For this, we trained various sectors of healthcare practitioners who were instrumental in providing proper education and creating awareness on BSE.

Various factors including education, culture, lack of time shortage of self-confidence, fear of possible cancer and various other myths stand as significant barriers for the widespread implementation of the BSE though it helps immensely in the early detection of breast cancer. This was compounded by awkwardness of self-breast handling, forgetfulness, negative socio-cultural perception about breast cancer and poorly structured support system after diagnosis.

This program brought out a feasibility and process for the early detection of breast cancer patients and emphasized the immense need for a public health education program to inculcate the practice of BSE among women to minimize the fear, denial, myths and misconceptions. We could also feel the importance of community and family involvement especially parents and spouse, which lead better facilitation of understanding of BSE as well as aBSE.

Considering the substantial role that can be played by BSE in low resource settings, there is an urgent need for interventions to implement and reinforce BSE and aBSE in the existing cancer awareness and screening programs.

We could sense that the simple tools and empowering Anganwadi workers shall go long way in bridging gap of application-knowledge and empower with less erroneous and more objective screening method. Though we agreed that the screening of breast cancer doesn't stop at BSE, it definitely was the first positive step towards more confirmative steps like mammogram and also shall prioritize, who should seek immediate medical attention (especially those with aBSC suggested lumps). This triaging shall help to prorated the mammograms- especially in resource constrained nations like India. Advanced tools like aBSE can surely boost the existing screening modalities to next level.

CONCLUSION

BSE and aBSE are quite useful in clinical detection of lump and simple technique of aBSE is easy to implement and educating them yielded very satisfactory results. With detection rate of 1.9%, which is quite high especially in the rural areas where medical facilities are poor, we feel that aBSE can be adopted in large scale and is well accepted among rural women and can improve on conventional BSE and is comparable with CBE.

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

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