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Breast cancer care in Sri Lanka: A review of breast clinic development, system gaps and future directions

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ABSTRACT

One-Stop Breast Clinics (OSBCs) have emerged as a model of rapid diagnosis and streamlined care, enabling breast cancer patients to undergo assessment, diagnosis, and overview of treatment planning within a single day. This literature review examined the current implementation of breast clinics in Sri Lanka, analysing their growth, effectiveness, patient outcomes, and operational challenges.

Well women clinics, cancer early detection centres, hospital based specialised breast clinics were identified as existing facilities catering specialised breast care services.

Existing literature underscores the potential benefits of specialised breast clinics in improving timely access to breast cancer care in Sri Lankan population while highlighting, poor progression of services, resource constraints, underutilisation and limited access. There was very limited literature, suggesting the need for encouragement to publish current practice with broader analysis to guide policy making.

Introduction

Breast cancer is the most prevalent cancer and most common cause of cancer related deaths among women worldwide and is also a leading cause of cancer-related mortality among Sri Lankan women (1, 2).

Despite significant scientific advances in breast cancer management, most of the world faces resource constraints that limit the capacity to improve early detection, diagnosis, and treatment (1).

In low and middle-income countries, worsened cancer survival is largely because of late disease stage at presentation, which leads to particularly poor outcomes when coupled with limited diagnosis and treatment capacity (1).

It was reported in 2001, in India, between 50% and 70% of new patients present with locally advanced or metastatic breast cancer at diagnosis compared to low European (44%) and American (36%) figures between 1990 and 1992 (1).

Even though Sri Lankan figures (32%) are better in the region and in some sub-Saharan African countries, where nearly 77% of patients present with advance disease, it is more than twice the proportion than current figures in more developed countries (12% in UK), which highlights the urgent need for more robust and effective programs for screening and early detection (2).

Breast Health Global Initiative's evidence-based guidelines for nations with limited healthcare resources highlighted the importance of early

diagnosis with clinical breast examination, imaging and pathological studies by means of specialised breast clinics (1).

Further upgrade to the specialised breast clinic is the one stop breast clinic (OSBC). These clinics aim to provide clinical examination, imaging results, initial cytopathological assessment and overview of treatment on the same day to alleviate the anxiety to the patient of waiting times while facilitating early detection and treatment. These clinics are well established in developed countries (3, 4).

St. Bartholomew's Hospital, the Breast and Oncology Centre in Barts Health NHS trust in London started it's one stop breast clinic service in 1993 and an audit after 18 months confirmed promising results suggesting OSBC was to be the standard (5).

The opportunistic early detection of breast cancer services was introduced to Sri Lankan field health services in 1996 through well woman clinics (WWCs), where women over 35 years of age have the opportunity to get them screened for hypertension, diabetes, breast and cervical cancers (6). These centres provide clinical breast examination by health care workers (public health midwives, medical officers) and teach regular breast self-examination to women as mammographic facilities are costly and available only at few places.

Since 2001, Breast Clinics have been operating in Sri Lanka intending to offer specialised, gender specific service to encourage women to seek treatment for breast related symptoms (7).

The concept of Cancer Early Detection Centres (CEDC) was initiated in 2004 by the National Cancer Control Programme (NCCP) of the Ministry of Health and the first-ever CEDC in Sri Lanka, was established in Narahenpita (8).

In 2020, the national advisory committee on prevention and control of cancers, instructed all major hospitals in Sri Lanka to establish Breast Clinics to reduce delays in diagnosing breast carcinoma (9).

This review aimed to understand the current status of Breast Clinics in Sri Lanka by examining their, growth, setup, patient outcomes, benefits, and challenges using available literature. By comparing Sri Lankan Breast Clinics with models from countries like UK, which pioneered this concept, the necessary adaptations for local contexts can be highlighted.

Methods

Literature search was conducted across databases including PubMed, ScienceDirect, CINAHL, and Google Scholar to find relevant studies from 2000 to 2023. Keywords such as "One-Stop Breast Clinic," "breast cancer diagnosis," "Sri Lanka breast cancer care," and "rapid diagnosis clinics" were employed. Each study was assessed for methodological quality and relevance. Performed a thematic analysis for comparative interpretation.

Inclusion Criteria: Studies on Breast Clinics in Sri Lanka, studies with relevant outcome metrics (e.g., diagnostic accuracy, patient satisfaction, waiting times), and studies with comparable OSBC models in other countries. Relevant national guidelines and annual reports also were included.

Exclusion Criteria: Studies unrelated to breast cancer diagnosis, non-Sri Lankan studies without comparative relevance, and articles on general oncology clinics were excluded from the study.

Data Analysis and Interpretation

Analysing the limited literature, the following key findings emerged:

Diagnostic Timeframe: According to a study conducted by Sumudu, *et al.,* the shortest diagnosis interval, and treatment interval recorded when a patient directly presented to an appropriate specialist after self-detecting a tumour was 2.9 weeks (11).

In another study, fine needle aspiration cytology, results were given a week later. Only patients with suspicious masses got immediate mammography. Others were done on appointments, which may have a delay of up to 6 weeks (7).

Patient Satisfaction

In the same study, it was shown that, 87.7% of the sampled group of women felt they were more comfortable because it was a gender specific clinic (7).

On the assessment of WWCs in Gampaha district 35-90% clinics were rated substandard based on poor physical facilities such as indoor and outdoor cleanliness, furniture, toilet facilities, linen etc (6).

Treatment Initiation

Only one study had assessed treatment intervals for different care pathways and shortest was 2.1 weeks when presented to an appropriate specialist after self-detecting a lump (7).

Challenges:

Perera et al stated that it has been a problem to have a permanent breast nurse, as it is hospital policy to transfer nurses between clinics and wards due to the existing acute shortage of trained nurses. Further, the same study highlights that breast clinic was not a fast track/ one stop, as it was not possible, due to the inadequate resources, personnel and facilities (7).

Balawardena *et al*., mentioned that patients underwent triple assessment with clinical examination, breast ultrasound, and fine-needle aspiration cytology at diagnosis. Core biopsy was not performed in most patients because it was not standard practice during the period the study population was treated. Although mammography was available, access was often limited, even in the diagnostic setting (2).

Vithana et al found that in Gampaha District, the increase of clinical breast examination coverage at WWCs was from 1.1% to 2.2% during 2003-2007. When considering the resources and time allocated to the programme, the authors feel that it is a "disappointing" task. With no targets set by the Ministry of Health and lack of knowledge combined with non-favourable attitudes among the service providers and target groups, identified as probable attributable factors (6).

Hewage, *et al.,* reported that in their study majority (83.7 %) had never used WWC services and only 0.6 % of the sample had a breast lesion detected at WWCs in a multicentre cross-sectional study conducted at 4 cancer treatment centres (Maharagama, Kandy, Karapitiya and Kurunegala) in Sri Lanka. This represents severe under-utilization of available breast cancer screening services offered by WWCs (11).

Results and Discussion

The review yielded insights into the operational structure, benefits, and challenges of Breast Clinics/ OSBCs in Sri Lanka.

Service model and outcome of Breast Clinics in Sri Lanka

Separate clinics for clinical breast examination started when WWCs were established in 1996. These clinics are community based. There were 611 Aclinics across the country by 2007(6).

A publication on analysis of quality of breast cancer early detection centres in Gampaha district in 2007 after 11 years from its onset, reported that only 45% of client satisfaction. Further, the service coverage was increased only to 2.2% from 1.1% from 2003 to 2007 which was inadequate for the amount of resources allocated. All 20 clinics were substandard for clinical breast examination and guiding on self-breast examination.

The establishment of 1st Breast Clinic in Sri Lanka was reported in 2001 at National Cancer Institute Maharagama with the guidance of Breast Team at Royal Marsdon Hospital, London. This offered triple assessment (7). There was no further published literature on any other clinics during this time.

In NCCP strategic plan 2020-2024, it is recommended to set up cancer early detection centres in each province. It also recommended to establish 26 breast clinics in hospitals across the country. These centres (CEDC) provides clinical assessment and imaging only (15).

NCCP annual report 2023 reported on increasing recourses with provision of mammography at CEDC Narahenpita and establishing new CEDCs in Polonnaruwa and Batticaloa (14). Vidanapathirana *et al*., reported that Teaching Hospital Jaffna also had established a CEDC (8). In this annual report, only data available was on CEDC Narahenpita in which, a 1.5% cancer detection rate reported. No data were available from other sites.

Breast Cancer Detect website, of NCCP mentioned 6 hospitals in the country as having currently functioning breast clinics namely National Hospitals Colombo, Kandy and Galle, Teaching Hospital Anuradhapura, Provincial General Hospitals Badulla and Kurunegala (16). There were published data on a Breast Clinic at Cancer Hospital Maharagama and Teaching Hospital Batticaloa (7, 10). Data on Batticaloa breast clinic reported a cancer detection rate of 11%. It was also highlighted that 45% of cancers were detected in the below 50 age group in contrast to 20% in United Kingdom detected in the same group (10). There was no analysis on diagnosis and treatment interval or patient satisfaction.

An audit on 1st established breast clinic at Cancer Hospital Maharagama, reported that it was not operated as a fast track / one stop clinic as mammography was offered only for patients with clinically suspicious lesions. Others had to wait 6 weeks. Reported 1/3rd among breast lumps were confirmed as cancer. Out of malignancies identified, 72% were early stage reaching the figures of breast clinics in developed countries. Ninety-eight percent were satisfied with the consultation. No data on treatment intervals but reported FNAC results were given in a weeks' time (7).

In a cross-sectional study on breast cancer patients at 4 state cancer treatment centres, care pathways and associated diagnosis and treatment durations were analysed. This study identified 4 care pathways where patients present after self-detecting a lump and one path was where suspicious lesions were detected at a screening service and referred to specialists. It was confirmed that the shortest diagnosis and treatment intervals when a patient was presented to the appropriate specialist were 2.9 and 2.1 weeks respectively (11).

Another study on presentation, diagnosis and treatment delays in breast cancer care recorded that two-thirds of the study sample had taken more than 2 weeks to consult a healthcare provider after self-detecting the breast lesion. One third reported to have a diagnostic delay of more than a month and 13 % took more than a month from the diagnosis to initiate treatment (12).

In terms of treatment delay, performing a core biopsy instead of fine needle aspiration cytology as the initial pathological investigation and having a mammogram prior to biopsy were associated with a reduced treatment delay (12). The same study concluded that delays in breast cancer care in Sri Lanka are much lower than those from other lower- and middle-income countries. However, there is a significant room for improvement, especially in relation to the excellence in quality of care, such as improving access to mammography services.

Challenges and Limitations

Key limitations identified include resource constraints, limited staff, and logistical issues related to high patient volumes.

All available literature highlights lack of adequate mammography services. It is available only in 18 state hospitals and a few centres in the private sector (13).

In most occasions, fine needle aspiration cytology is used for pathological assessment. There were difficulties to keep the same trained nursing staff to remain in the clinics (7).

Breast clinics are available in very few urban areas, which means, rural populations face challenges in accessing them.

Comparison with OSBC Models in Other Countries

Compared to OSBC models in developed countries, Sri Lanka's Breast Clinics operate under unique constraints.

Currently in the United Kingdom, the number of patients being referred for urgent assessment has steadily increased since the introduction of the 2-week wait referral to OSBCs. As a result, the number of patients who are able to be reassured as being cancer free is around 93% (4).

In Sri Lanka, since the start of a specialist Breast Clinic in 2002, the progress to the services has not reached a state to offer wider coverage across the country.

In United Kingdom, patients receive triple assessment, results of the imaging and overview of

management on the same day and some centres facilitate radiologist-led discharges to increase patient experience.

In Sri Lanka, even though there are functioning Breast Clinics, there is no enough published data to suggest that OSBC service has become the standard of practice yet.

Conclusions

In Sri Lanka, WWC, CEDC and Breast Clinics in a few urban hospitals function as services fulfilling the need of specialised breast care. WWCs has the widest coverage across the country but only offer screening by means of clinical breast examination and educating self-breast examination. Literature highlights underutilisation of WWCs questioning their cost effectiveness. The services of CEDC still limited to very few locations.

There are data available on functioning Breast Clinics of few centres with better outcomes compared to other low- and middle-income countries. However, the rate of progression of this service appears inadequate.

The benefit and shorter diagnosis and treatment intervals with attendees to specialist Breast Clinics compared to other pathways was identified in most studies.

Inadequate resources curtailing access to mammography is a limiting factor. Absence of targets set by the Ministry of Health and lack of knowledge combined with non-favourable attitudes among the service providers were highlighted as probable reasons for lack of improvement.

The expansion of Breast Clinics to all major hospitals across the country and gradually upgrading them to one stop services by increasing resources, setting up targets will allow more patients to benefit.

Future studies could focus on the cost-effectiveness and more detailed assessment of the challenges of current practice in Sri Lanka, to further guide policy development and resource allocation.

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