RESEARCH ARTICLE

Quality of Breast Cancer Early Detection Services Conducted by Well Woman Clinics in the District of Gampaha, Sri Lanka

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Abstract

Background: Breast cancer is the most common cancer diagnosed in females in Sri Lanka and early detection can lead to reduction in morbidity and mortality. Aim: To evaluate selected aspects of breast cancer early detection services implemented through well woman clinics (WWCs) in the Gampaha District. Methods: The study consisted of two components. A retrospective descriptive arm assessed clinical breast examination (CBE) coverage of target age group women (TGW) of 35-59 years in all the WWCs in Gampaha district over 2003-2007. A cross sectional descriptive study additionally assessed quality of breast cancer early detection services. The Lot Quality Assurance Sampling (LQAS) technique was used to decide on the lot size and threshold values, which were computed as twenty and six clinics. Checklists were employed in assessing coverage, physical facilities and clinic activities. Client satisfaction on WWC services was assessed among 200 TGW attending 20 WWCs using an interviewer-administered questionnaire. Results: CBE coverage in the Gampaha district increased only from 1.1-2.2% over 2003-2007. With regard to physical facilities, the number of clinics that were rated substandard varied between 7-18 (35- 90%). The items that were lacking included dust bins, notice boards, stationary, furniture and linen, and cleanliness of outside premises and toilets. With regard to clinic activities, punctuality of staff, late commencement of clinics, provision of health education, supervision, CBE and breast self-examination (BSE) were substandard in 7- 20 clinics (35-100%). Client satisfaction for WWC services was 45.2% (IQR: 38.7-54.8%) and only 11% had a score of ≥70%, the cut off set for satisfaction. Conclusions: Breast cancer early detection service coverage in the Gampaha district remained low (2.2%) in 2007, 11 years after commencing WWCs. All 20 clinics were substandard for overall CBE and BSE.

Keywords: Breast cancer - well woman clinics - quality of care - early detection - clinical breast examination - Sri Lanka

Introduction

Worldwide, breast cancer is the most common cancer diagnosed among women and is the leading cause of cancer deaths (Parkin et al., 2001). In the Sri Lankan context, it is the commonest neoplasm with an age standardized incidence rate of 9.7 per 100,000 population in 2005. The age standardized rate for females was 18.3 per 100,000 population, accounting for the highest percentage (25.4%) of cancers among females (National Cancer Control Programme Sri Lanka, 2009).

A potentially effective way to increase the cure rate or prolonged survival of breast cancer patients is to detect and treat it at an early stage (Fung, 1998). Mammography, clinical breast examination (CBE) and breast self-examination (BSE) are the methods used in screening for early detection of breast cancer. Breast cancer screening tests with advances in treatment, have been shown to play a pivotal role in reducing breast cancer related mortality and improving survival (Ries et al., 2003).

The opportunistic early detection of breast cancer 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 mellitus, breast cancer and cervical cancer. With regard to early detection of breast cancer, this programme depends on CBE conducted by a health care worker (mostly by Public Health Midwives) and provision of awareness and skills on the practice of regular BSE as mammographic facilities are costly and available only at few places (Family Health Bureau Sri Lanka, 2009).

Only 108,150 women have undergone CBE in 611 WWCs conducted throughout the country in year 2007 (Family Health Bureau Sri Lanka, 2009), though it was not possible to compute the coverage of CBE among target

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age group women (TGW) due to unavailability of 35-59 year category data at national level. Previous assessment of coverage of cervical cancer screening at the WWCs in the Kalutara District in Sri Lanka in 2002 was reported to be as low as 2.2% (Liyanage, 2002). Although there were no set targets, the available services did not appear to be utilized to the maximum.

The success of a programme depends not only on the coverage of the target population, but also on the quality of the services provided, including infrastructure and the physical facilities, follow up and referral care services as well as other human factors related to the service provider which comprise a holistic approach. Improvement of quality of services will certainly help to improve the coverage, with the ultimate outcome of early detection of breast cancer, leading to better quality of life and greater survival rates. So far, no study was conducted in Sri Lanka to evaluate the quality of breast cancer early detection services.

Present study assessed the quality of early detection services for breast cancer provided in the WWCs in the district of Gampaha, which constitutes one of the three districts of the Western province of Sri Lanka.

Materials and Methods

Study design

A descriptive cross-sectional study was conducted in 2008 in the district of Gampaha.

Study area

Sri Lanka is divided into nine provinces and 25 districts and the Gampaha district which comes under the Western province is the second most populous district in the country, with a population of 2,064,651 with 91% of Sinhalese, 3.2% of Sri Lankan Tamils, 3.8% of Moors and less than 2% of other minority groups according to census conducted in 2001 (Department of Census and Statistics, Sri Lanka, 2003).

Provincial health care services are headed by the Provincial Director of Health Services and are assisted by Regional Directors of Health Services (RDHS) who are in charge of individual district level services. Each district is subdivided into seven to twenty Medical Officer of Health (MOH) areas which are the smallest health units and are headed by Medical Officers of Health (MOH) (Ministry of Health Sri Lanka, 2008; Family Health Bureau Sri Lanka, 2009). Gampaha district has a total of 16 MOH areas [which covers 13 Divisional Secretarial (DS) areas], and all except Katunayaka MOH area, which does not conduct WWCs were included in the study.

The MOH, supported by a team of heath personnel is responsible in organizing preventive health services in his/her area. Public Health Midwife (PHM) is the grass root level health care worker providing domiciliary care to mothers, children and women within the community (Family Health Bureau Sri Lanka, 2009). Early detection services for breast cancer are mainly delivered through WWCs conducted by the MOH and his/her public health team. There are 54 functioning WWCs at the field level in this district.

Sampling, study instruments and data collection

Assessment of breast cancer early detection services was carried out in three components: Component 1: assessment of coverage. Component 2: assessment of quality. Component 3: assessment of client satisfaction

Component 1: The data relevant to coverage and quality of care of the breast cancer early detection services from 2003-2007 were obtained from registers maintained at each WWC of all the MOH areas in the district of Gampaha. Data on number of women who have undergone CBE, number of women detected to have abnormal breast findings and the number of women with abnormal breast findings referred for further care per year were collected by three age categories (<35, 35-59, ≥60 years) using check lists. The female population data by the above age categories by DS areas were obtained for the years 2003-2007 from the respective DS Offices. Data collection was conducted by six trained retired PHMs.

Component 11: Lot Quality Assurance Sampling (LQAS) was selected for computing the number of clinics that need to be assessed and the threshold level to consider an item assessed as standard/substandard for the whole district. Upper threshold for the proportion of clinics providing unsatisfactory level of a particular component of breast cancer early detection services (test value of the population proportion) was considered as 50% (0.5), and lower threshold for proportion of clinics providing unsatisfactory level of a particular component of breast cancer early detection services (anticipated value of population proportion) was considered as 20% (0.2). A sample of 20 clinics were required to test the hypothesis that clinics providing poor quality services will be identified at a 5% significance level with a power of 90%. If the number of substandard clinics exceeded six (threshold level), that component of breast cancer early detection services in the Gampaha District was considered to be of poor quality (Lemeshow and Taber, 1991; Lwanga and Lemeshow, 1991). Number of clinics to be studied from each MOH area was decided probability proportionate to the number of WWCs in each MOH area. When there was more than one clinic in a MOH area, simple random sampling technique (lottery method) was used to select the required number of WWCs from each MOH area. Structured check lists were used to assess availability and adequacy of the facilities/resources and the clinic activities. Data collection was done by a retired medical officer having work experience as a MOH.

CBE and BSE are repetitive activities conducted by the PHMs on the clients and the clients on themselves respectively. For these repetitive activities, it was decided to use 10:2 binary rule based on LQAS, where if more than two substandard activities were noted out of ten such activities observed, that particular clinic was considered to provide substandard services. The entire district was taken as substandard for the particular activity in the presence of more than six such substandard clinics among the 20 clinics selected. Checklists for the assessment of CBE and BSE were developed using modified Delphi technique. Data collection was conducted by the same retired medical officer.

Component 111: Sample of 200, 35-59 year age

group Sinhala speaking women were interviewed using an interviewer administrated questionnaire. Ten women among first visits were randomly selected from each clinic. Data collection was conducted by pre-intern medical officers who were trained in obtaining informed consent, ensuring confidentiality, minimizing non-response and collecting reliable and accurate data collection. Client satisfaction was assessed on accessibility, status of the clinic building and other infrastructure, waiting time to obtain services, time spent with the service provider, provision of privacy, behaviour of the service provider, health education and opportunities given for clarifications.

Data analysis

Each questionnaire was inspected for inconsistencies and incompleteness immediately after it was filled. Data entry, entire data processing and analysis were done using statistical software Epi Data V 2.2 and SPSS Version 16. Validity checks were included during the data entry to avoid errors. Items assessed in relation to quality assessment and client satisfaction were expressed as percentages. CBE and BSE were assessed using scoring a system where an overall score of <80% was considered as substandard.

Scoring system to assess client satisfaction was developed on perceived clinical importance of each question after extensive literature review with expert support. Bivariate analysis was conducted using chi-square test to determine the factors associated with level of client satisfaction, followed by multiple logistic regression to control for confounding factors. The results were expressed as odds ratios (OR) and the respective 95% confidence intervals (95%CI).

Ethical/Administrative considerations

Ethical clearance was obtained from the Ethics Review Committee of the Faculty of Medicine, University of Kelaniya. Permission to conduct study was obtained from the RDHS and the MOHs. Written informed consent was obtained from all the clients.

Results

Coverage

CBE coverage increased from 1.1-2.2% over 2003-2007. Overall proportion of breast abnormalities detected among those who participated in 2007 was 1.8% and the proportion referred for further care was 86.8% of those detected with breast abnormalities.

Infrastructure/Resources

The number of clinics that were rated substandard on the assessment of physical facilities varied between 7-18 (35-90%) and the items that were lacking included: clean surroundings (n=7; 35%), dust bins inside (n=11; 55%) and outside (n=18; 90%) clinics, notice boards inside (n=11; 55%) and outside (n=18; 90%) the clinics, Magi boards and pens (n=15; 75%), adequate chairs inside examination room (n=9; 45%), linen (n=9-13; 45-65%), WWC stationary (n=12-14; 60-70%) and clean toilets (n=11; 55%).

Clinic activities

Commencement of clinics on time (n=13; 65%), punctuality of staff (n=10; 50%), conduct of CBE (n=20; 100%), all aspects on health education of clients (n=7-18; 35-90%) and supervision by area (n=15; 75%) and district level (n=18; 90%) superiors were rated as substandard for the district in the assessment of clinic activities.

CBE

The overall procedure on CBE was observed to be substandard (a score of <80%) in all the 20 clinics and therefore for the entire district. Out of 16 individual items assessing the steps of CBE, 12 were substandard for the entire district (Table 1). However, "polite acceptance of the client" was observed to be satisfactory in 18 of the 20 clinics, and thus considered as of high standard for the entire district.

BSE

BSE procedure was observed to be substandard (a score of <80%) in all the 20 clinics and therefore for the entire district. Of the individual steps in relation to the procedure on BSE, all except knowledge on "correct posture of conducting BSE" were observed to be substandard (Table 1).

Client satisfaction

For the assessment of client satisfaction, 200 women of 35-59 years were subjected to exit interviews. Response rate was 100%. Median age of the group was 41 (IQR;

Table 1. Assessment of Clinical Breast Examination (CBE) and Breast Self-examination (BSE) at Well Woman Clinics

Item/Criteria	Number of clinics failing to meet the criteria (n= 20) (%)	Standard/ Substandard status
CBE:		
Polite acceptance of the client	2 (10%)	Standard
Maintenance of privacy during CBE	8 (40%)	Substandard
Explaining the procedure before CBE	18 (90%)	Substandard
Explaining benefits of CBE	20 (100%)	Substandard
Giving client an opportunity to ask questions	20 (100%)	Substandard
Explaining the frequency of conducting CBE	20 (100%)	Substandard
Explaining the procedure of BSE	8 (40%)	Substandard
Proper exposure of the client	11 (55%)	Substandard
Positioning of the client	17 (85%)	Substandard
Inspection of the breasts	2 (10%)	Standard
Starting point of palpation	5 (25%)	Standard
Direction of palpation	7 (35%)	Substandard
Use of proper surface of the hand for palpation	1 (5%)	Standard
Palpation of the axillary lymph nodes	12 (60%)	Substandard
Checking for nipple discharge	8 (40%)	Substandard
Conveying the findings of CBE to client clearly	18 (90%)	Substandard
Overall CBE (a score of >80%)	**20 (100%)**	**Substandard**
BSE:		
Knowledge:		
Correct Frequency of BSE	13 (65%)	Substandard
Date to conduct BSE	18 (90%)	Substandard
Posture of BSE	5 (25%)	Standard
Performance of BSE:		
Proper exposure	20 (100%)	Substandard
Position of the woman	20 (100%)	Substandard
Inspection of breasts	20 (100%)	Substandard
Starting point of examination	17 (85%)	Substandard
Direction of palpation	17 (85%)	Substandard
Use of proper surface of hand for palpation	13 (65%)	Substandard
Palpation of the axillary lymph nodes	20 (100%)	Substandard
Check for nipple discharge	17 (85%)	Substandard
Overall BSE (a score of >80%)	**20 (100%)**	**Substandard**

Table 2. Client Satisfaction on Facilities and Services Provided at the Well Woman Clinics.

Variable	Level of satisfaction (N = 200)			
	Very satisfied n (%)	Satisfied n (%)	Not satisfied n (%)	Not satisfied at all n (%)
Available facilities:				
Space in the clinic building	25 (12.5)	141 (70.5)	33 (16.5)	1 (0.5)
Sitting facilities in the waiting area	25 (12.5)	146 (73.0)	29 (14.5)	0 (0)
Comfort in the waiting area	17 (08.5)	152 (76.0)	31 (15.5)	0 (0)
Overall cleanliness in the clinic	27 (13.5)	138 (69.0)	34 (17.0)	1 (0.5)
Cleanliness of toilets	11 (05.5)	106 (53.0)	67 (33.5)	16 (8.0)
Services Provided:				
Politeness of service provider	36 (18.0)	160 (80.0)	04 (02.0)	0 (0)
Privacy while conducting CBE*	33 (16.5)	139 (69.5)	28 (14.0)	0 (0)
Time spent on CBE	22 (11.0)	172 (86.0)	06 (03.0)	0 (0)
CBE on the whole	25 (12.5)	170 (85.0)	05 (02.5)	0 (0)
HE*** on BSE** on the whole	81(40.5)	115 (57.5)	04 (02.0)	0 (0)
Overall services	33 (16.5)	166 (83.0)	01 (00.5)	0 (0)

CBE*: Clinical Breast Examination, BSE**: Breast Self Examination, HE***: Health education

37-48) years. A majority of them (n=193; 96.5%) were Sinhalese and most (n=183; 91.5%) were currently married. More than half of the group (n=102, 51%) had studied up to Grades 10-11 and 25 (12.5%) were employed.

A majority (n=136; 68%) had to wait for more than three hours to receive all the services. However, only 17 (8.5%) perceived it as "long" or "too long". Clients who were "satisfied" or "very satisfied" with all the five items assessed under infrastructure, ranged from 58.5% (n=116) for cleanliness of the toilets to 85.5% (n=171) for the availability of sitting facilities in the waiting area (Table 2). Ninety-eight percent (n=196) expressed satisfaction with regard to curtsy (politeness) displayed by the health care workers. A majority were satisfied with all five items included under service provision, which ranged from 70% (n=139) for privacy during CBE to 86% (n=172) for time spent on CBE (Table 2). Almost ninety-eight percent (97.5%; n=195) expressed satisfaction with regard to overall aspects related to CBE. Similarly 98% (n=196) were satisfied with health education activities conducted on BSE. Fifty-nine percent (n=117) had claimed that they understood BSE very well. Almost 100% (99.5%; n=199) expressed overall satisfaction in relation to services provided at the WWC.

The median percentage score for overall client satisfaction was 45.2% (IQR: 38.7-54.8%). A majority (n=122; 61%) had an overall client satisfaction score of <50%. Only 11% (n=22) had a score >70%, the cut off score set for satisfaction. None of the socio demographic factors were found to have a significant association with overall client satisfaction, in the bi-variate nor multivariate analyses. Almost 100% (99.5%; n=199) of the clients stated that they would recommend WWC services to others for early detection of breast cancer. Highest proportion (24%; n=48) of the clients thought that increasing public awareness on WWC services was the best method to increase the trends in obtaining clinic services.

Discussion

Overall CBE coverage in the Gampaha District has increased only from 1.1-2.2% over 2003-2007. The items that were substandard regarding physical facilities included lack of stationary, linen, furniture and cleanliness of toilets. Most of the clinic activities were observed to be substandard including punctuality of staff, health education and supervision. The overall procedures on CBE and BSE were substandard in all the 20 clinics. Overall client satisfaction too was poor.

The increase of CBE coverage from 1.1% only to 2.2% during 2003-2007 is rather disappointing taking into consideration the resources and time allocated to the program. With no targets set by the Ministry of Health and lack of knowledge combined with non-favourable attitudes among the service providers and TGWs, probably are the attributable factors for the above. The main focus of PHMs is maternal and child health services and thus the low priority extended for detection of non-communicable diseases is not surprising. Liyanage (2002) too reported a low coverage for cervical cancer screening in 2002 in the Kalutara district. These figures are quite low compared to 65% of CBE coverage within previous two years found among women over 40 years who had participated National Health Interview Survey in the United States of America in 2005 (Coughlin, 2008). Of the abnormalities detected by PHM, only the cases confirmed by the MOH are referred for specialist care and thus referral rate was only 86.8% instead of 100%.

Substandard physical facilities were ones that could be remedied with minimum costs and effort. However, the substandard clinic activities such as commencement of clinics on time, punctuality of staff, the process of CBE and BSE, poor quality health education and lack of supervision reflect lack of motivation and favourable attitudes. Both CBE and BSE were rated as substandard in all the 20 clinics, which reflect the poor standards of clinical procedures which is the foundation for detection of early pathological lesions.

The median score for overall satisfaction was as low as 45.2% and only 11% had a score of ≥70%, despite the interviews being conducted at the clinic premises, which was likely to discourage clients from divulging the true opinion. Liyanage (2002) reported an overall client satisfaction level of 62% regarding cervical cancer screening programme in the Kalutara district. Almost all consumers were satisfied with the maternal and child health services in the study conducted in the MOH area, Kaduwela (Jayatissa, 1997). Pinidiyapathirage (2003) found over 87% client satisfaction on maternal and child health services in the Gampaha district. However, a direct comparison of client satisfaction with other studies may not be appropriate because of the difference adopted in scoring "dissatisfaction". In other studies, it was assigned a zero score when a minus score was assigned by us.

Lack of punctuality of staff is a possible contributory factor towards the long waiting time (of more than three hours) as expressed by 68% (n=136) of the clients. However, despite this, only 8.5% (n=17) considered it to be long, indicating the preparedness demonstrated by the clients "to stay long hours" (due to non availability of an appointment system) when seeking services from government sector institutions. In the Kalutara study, on

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cervical cancer screening (Liyanage, 2002), a waiting time of more than two hours had been experienced only by 24% of the clients. This difference may partly be attributed to the district differences and the increase in numbers attending the clinics in 2008 compared to 2001.

A higher proportion satisfied with all the components of physical facilities except for the cleanliness of toilets (41.5%; n=83). Even though a majority (n=172; 86%) were satisfied with maintenance of privacy during CBE, it was rated as substandard for the whole district. This discrepancy might be due to lack of concern regarding privacy, as these are female only clinics and because of low expectations due to their ignorance of the expected standards. Similarly, 98% (n=195) of clients were satisfied with overall CBE, but it was rated as substandard in all 20 clinics. Similarly 98% (n=196) were satisfied with the health education on BSE, whereas clinic assessment showed health education was substandard. Fifty-nine percent (n=117) expressed they understood BSE very well, but all 20 clinics were found to be substandard on assessment of quality with regard to overall BSE. This, points to the fact that although the PHMs have the communication skills they lack knowledge on the methodology of the deliverables. Satisfaction expressed by clients is anticipated, as they were not knowledgeable on the subject. Sri Lanka offers free health care services and a majority seeking the services belong to low and middle-income categories. They are well aware of the delays that are likely to occur especially in settings where free services are provided, but through gratitude towards receipt of free services, they come prepared to tolerate whatever hardships they have to undergo.

Majority (n=196; 98%) were satisfied with the polite nature of the health care workers in contrast to criticism heard very often about them being discourteous to the clients. Kindness they receive from the service providers would definitely add to the subconscious assessment of satisfaction. Almost 100% (n=199) of the clients had stated that they would recommend WWCs to others for breast cancer early detection services; a positive finding which is a reflection of their perceived degree of satisfaction. This is quite different from Yang et al. (2011) claiming high level of health care system distrust as being associated with low participation in CBE and Pap smear testing among women over 18 years (n=5268) in Philadelphia Health Management Corporation's Southeastern Pennsylvania Household Health Survey in 2008. A quarter (24%; n=48) of the clients had requested for more awareness programs on the availability of the services which should be considered seriously, as this well be a very strong contributory factor for the low utilization of the services.

Strengths and limitations

As the study was confined to one district, the findings would be directly applicable only to the Gampaha district. Accuracy of the rate of coverage described depends on the reliability and the completeness of the secondary data in spite of maximum effort taken to avoid errors.

A representative sample of clinics was selected using LQAS technique, which provides a relatively small and manageable sample size with a decision rule judging each component observed as standard or substandard. The areas that have reached or exceeded the upper performance level are precisely identified, thereby avoiding unnecessary investment of extra resources in those areas. Areas that fall under the lower threshold of performance are recognized, enabling setting priority in improving these underserved areas. One limitation in the use of LQAS is failing to focus at individual level, as the concept is based on either accepting or rejecting a lot as a whole. However, the objective of the present study was to assess the baseline situation of the breast cancer early detection services for the purpose of further intervention, for which the use of LQAS sampling was suitable enough.

All the observations related to assessment of quality were conducted by the same person trained for the purpose. Hawthorne effect is a form of reactivity whereby subjects improve an aspect of their behaviour when experimentally measured, simply in response to the fact that they are being observed and not as a response to any particular experimental manipulation (McCarney et al., 2007). In order to minimize this, no prior notice was given to the MOH or clinic staff regarding the date of assessments. All observations other than the repetitive activities were made about one hour after commencement of clinic activities giving sufficient time for the PHMs to get accustomed to the presence of the investigator. However it was ensured that the assessments were carried out early enough, in order to capture the best of their performance before fatigue sets in.

Client satisfaction was measured using exit interviews which enabled to assess all aspects of the relevant services as at this stage, the client had been exposed to all service components and were in a better position to provide accurate responses. As these interviews were conducted in clinic premises, there might have been a certain degree of reluctance to express dissatisfaction, even though all the measures were taken to minimize this by interviewing the clients in a secluded area (with no access to health care workers) after explaining clearly the purpose of the study. Within the district, the client satisfaction survey had to be confined to those who spoke the Sinhalese language due to logistical and monetary constraints. Therefore, findings of it can only be generalized to the Sinhala speaking population in the Gampaha district.

Findings of the present study were used in developing an educational intervention for increasing breast cancer early detection among PHMs and TGWs, implementing the concept of putting research into practice.

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