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Patient factors that lead to presentation delay in breast cancer among Sri Lankan women: A cross-sectional study

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ABSTRACT

Background: Breast cancer (BC) poses a significant public health concern as it is the most common cancer detected among women worldwide. Early detection and intervention are associated with better prognosis and survival. A primary reason for the rising mortality and morbidity in developing countries is the lack of patient education and practice early detection programs and presentation. **Aims and Objectives**: The main objective of this study is to evaluate the prevalence of delayed presentation and the factors lead to delay among BC patients in Sri Lanka. **Materials and Methods**: A descriptive cross-sectional study was conducted from January 01, 2023, to June 30, 2023 among women diagnosed with BC attending two selected state hospitals in Sri Lanka. All women with histological diagnosis of early, locally advanced, or metastatic BC attending for treatment were included and women with recurrent BC and concomitant other cancers were excluded. Presentation delay was defined as ≥3 months. The calculated sample size was 396. **Results**: About 47.5% of our study population (n = 188) had a presentation delay of more than 3 months. The main reasons for the delay in presentation were, being unaware that BC is a major problem in Sri Lanka, difficulty in accessing healthcare, and not being able to find time due to family and social commitments. Women who had not been practicing self-breast examination had a significant association with presentation delay (OR = 3.26, 95% CI - 0.090–0.362, P = 0.001). The participants who were having a presentation delay were also more likely to be diagnosed with an advanced stage of cancer (OR = 2.86, 95% CI - 2.573–3.153, P = 0.000). **Conclusion:** Our study population depicts a good knowledge related to BC symptoms, risk factors, and early detection methods. However, very few are practicing them. There is also a significant delay of presentation due to various factors. Awareness and good practices would lead to early detection and diagnosis and improve overall survival.

Key words: Breast cancer; Early detection of breast cancer; Presentation delay

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INTRODUCTION

Breast cancer (BC) is an important public health challenge and is the leading cause of female cancer mortality globally.[1] A primary reason for the escalating mortality and morbidity is the late diagnosis of the disease and the lack of early detection programs in developing countries. Most developed countries have taken measures for early detection and management of BC thereby significantly reducing the disease burden.[2] In Sri Lanka, the most common cancer among women is BC. According to the national cancer registry data, BC incidence is on the rise. On average, 3000–4000 new cases are diagnosed each year.[3,4]

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The current guidelines from the American Cancer Society state that women 20 years and older should practice monthly self-breast examination (SBE).[5] Women 20–39 years old should have a clinical breast examination (CBE) every 3 years, while women 40 years and older should have a yearly CBE. Women between 40 and 44 have the option to start screening with a mammogram every year, and women 45–54 should get mammograms every year. Women 55 and older can switch to mammogram every other year, or they can choose to continue yearly mammograms. However, depending on the risk above management programs might change accordingly.[6]

In Sri Lanka, well woman clinics (WWC) at the community level conduct awareness programs on SBE and provide CBE for women over 35 years.[7] However, the Sri Lankan health sector does not have a well-established BC screening program. Many women do not undergo SBE, CBE, or screening mammography, mostly because they do not know the importance of BC screening and how it can contribute to the early detection of BC.[8]

A study on BC early detection in a peripheral district in Sri Lanka revealed that despite being offered free of charge, the coverage of CBE remains low.[9] On the other hand, another team researched on the topic "Does the choice of care pathways matter in timely BC care in Sri Lanka?" concluded that a vast majority of the study group (n=787) self-detected the breast lesion, while only 13 had been detected through screening.[10]

A study conducted in South Africa concluded that barriers for early detection of BC can be patient-related, structural/health care system related.[11] Patient-related barriers include lack of knowledge, not practicing SBE, sociocultural/sociodemographic, psychological, logistical, and financial factors. Structural barriers included high treatment-associated costs for patients and their families, burden of transportation to central treatment centers, and limited access to appropriate healthcare resources.

As aforementioned, we do not have a national screening mammography program in Sri Lanka. Thus the primary mode of early detection of BC is through education, breaking myths and barriers, and promoting SBE, especially among women more than 40 years of age.

Therefore, it is important to identify the patient's associated barriers for early detection and management of BC in Sri Lankan women. The findings will be useful to make recommendations to revisit the current BC screening program.

Aims and objectives

The main objective of this study is, therefore, to evaluate the prevalence of delayed presentation of BC patients and the factors that lead to delay in presentation among Sri Lankan women.

The aim of this study is to address these delays and improve the outcome of breast cancer.

MATERIALS AND METHODS

A descriptive cross-sectional study was conducted from January 01, 2023to June 30, 2023 among women diagnosed with BC attending two selected state sector hospitals in Sri Lanka: Colombo South Teaching Hospital and National Cancer Institute (Apeksha Hospital) Sri Lanka. All women with histological diagnosis of early, locally advanced, or metastatic BC attending for treatment were included and women with recurrent BC and concomitant other cancers were excluded from the study.

Presentation delay (time between initial symptom and first consultation by a doctor) was defined as ≥3 months based on previous similar studies.[12] The calculated sample size was 396.[13]

Participants

Participants received an information sheet that explained the study and what their participation would include. The study was anonymous, and confidentiality was assured.

Data collection

Data were collected using an interviewer-administered questionnaire and a data extraction sheet developed based on peer-reviewed published studies. The questionnaire was divided into four distinct sections. The first section contained sociodemographic variables, and the second section contained clinical-pathological information about patients. Third and fourth sections contained knowledge about BC and reasons for delaying in presentation, respectively. Histological and clinical data were extracted from the clinical records using a data extraction sheet.

Data analysis

Statistical analysis was done using SPSS statistical software version 26. Frequencies and percentages were used to describe study variables, and the Chi-square test, independent t-test, and multivariable logistic regression models were used to assess factors associated with delays in presentation of BC. A $P<0.05$ was considered as significant.

Ethical approval was approved by the Ethics Review Committee, Colombo South Teaching Hospital.

Administrative clearance was obtained from directors and consultants of the relevant hospitals.

RESULTS

Sociodemographic and clinic-pathological data

Our total study sample included 397 patients. The mean age was 57 years (28–88 years). More than 95% had received a formal education up to ordinary levels. Table 1 illustrates the sociodemographic data of our population.

Our study population consisted of 53.5% T2 stage BC. Axillary node positivity was seen in 64.1% and 9.6% had metastatic disease on presentation. About 70.2% had undergone mastectomy as shown in Table 2.

Knowledge regarding BC among the patients in the study population

Only 53% (210) were aware that BC is the most common cancer among females in Sri Lanka. Majority of the participants (81.0%/322) were aware about at least one symptom of BC and 72%/286 identified breast lump as the most common symptom of BC.

With regards to the early detection of BC, a large majority (>80%/318) of our study population were aware of BC early identification methods. However, many patients had not practiced any techniques as depicted in Table 3.

Table 1: Sociodemographic characteristics of the study population

Variable	n (Percentage)
Age (years)	
25–35	8 (2.0)
36–45	42 (10.6)
46–55	110 (27.8)
56–65	146 (36.9)
66–75	72 (18.2)
75–85	16 (4.9)
>86	2 (0.5)
Mean	57.74 (standard deviation=10.23)
Marital status	
Married	266 (67.2)
Unmarried	130 (32.8)
Highest education level	
No formal education	14 (3.5)
Up to ordinary level pass	244 (61.6)
Completed secondary education	98 (24.7)
Higher education	40 (10.1)
Employment status	
Currently employed	58 (14.6)
Currently unemployed	338 (85.4)
Monthly income (rupees)	
<20,000	158 (39.9)
21 000–50,000	170 (42.9)
51 000–100,000	52 (13.1)
>101,000	16 (4.0)

Prevalence of presentation delay and the associated factors

Presentation delay (time between initial symptom and first consultation by a doctor) was defined as ≥3 months.[12]

About 47.5% of our study population (n=188) had a presentation delay of more than 3 months.

The main reasons for the delay in the presentation were difficulty in accessing healthcare, not being able to find time due to family and social commitments, and not being aware where to get treatment as shown in Table 4.

Women who had not been practicing SBE had a significant association with presentation delay (OR=3.26, 95% CI - 0.090–0.362, P=0.001). The participants who were having a presentation delay were also more likely to be diagnosed with an advanced stage of cancer (OR=2.86, 95% CI - 2.573–3.153, P=0.000). All patients in T3 and T4 disease had a presentation delay of more than 3 months.

Table 2: Clinicopathological details of the study population

Variable	n (Percentage)
T stage	
T1	80 (20.2)
T2	212 (53.5)
T3	44 (11.1)
T4	60 (15.2)
N stage	
N0	142 (35.9)
N1	152 (38.4)
N2	60 (15.2)
N3	42 (10.6)
M stage	
M0	356 (89.9)
Mx	2 (0.5)
M1	38 (9.6)
Type of surgery	
Total mastectomy	278 (70.2)
Wide local excision	118 (29.8)
Type of axillary management	
Sentinel lymph node biopsy	122 (30.8)
Axillary node clearance	274 (69.2)
Other	12 (3.0)

Table 3: Knowledge and the practice regarding early detection methods of breast cancer

Variable	n (Percentage)
Self-breast examination	
Having awareness	319 (80.5)
Practicing	60 (15.3)
Clinical breast examination	
Having awareness	323 (81.6)
Practicing	12 (3.0)
Mammography	
Having awareness	341 (86.2)
Practicing	18 (4.5)

Table 4: Factors contributing to presentation delay

Factors contributing to presentation delay	Number with delay in presentation (%)	Number with no delay in presentation (%)
Accessing health care/clinics was difficult (n=132)	n=78 (59.1)	n=54 (40.9)
I could not find time due to family or social commitments (n=136)	n=60 (44.1)	n=76 (55.9)
I was not aware where to get treatment (n=110)	n=44 (40.0)	n=66 (60.0)
I was afraid of chemotherapy and radiotherapy (n=56)	n=34 (60.7)	n=22 (39.3)
I was afraid to undergo mammogram (n=46)	n=32 (69.6)	n=14 (30.4)
I was afraid to undergo procedures like biopsy (n=48)	n=32 (66.7)	n=16 (33.3)
I was afraid to undergo surgery (n=48)	n=30 (62.5)	n=18 (37.5)
I was afraid to undergo breast examination (n=42)	n=28 (66.7)	n=14 (33.3)
I thought I would definitely lose my breast (n=34)	n=18 (52.9)	n=16 (47.1)
I was worried about death (n=20)	n=12 (60.0)	n=8 (40.0)
I was worried about stigma to the family from society (n=20)	n=10 (50.0)	n=10 (50.0)
I sought treatment from indigenous doctors (n=12)	n=6 (50.0)	n=6 (50.0)

Sociodemographic factors such as age (P=0.91), marital status (P=0.75), educational level (P=0.93), occupation status (P=0.31), or financial status (P=0.10) were not associated with delay in presentation. Parity was also not associated with delay in presentation (P=0.81).

DISCUSSION

BC is an important public health challenge with a very significant mortality globally and in Sri Lanka. A primary reason for the significant mortality is the late diagnosis of the disease and the lack of early detection programs in developing countries.

In Sri Lanka, the National Cancer Control Program under the ministry of health conducts a variety of programs for early detection of BC. The main strategy is through education and promotion of SBE and establishment of WWC. WWC are conducted by 980 Medical Officer of Health offices in Sri Lanka as per the national strategic plan (2019–2023) by the ministry of health.[13]

The National Cancer Control Program – Narahenpita also conducts a BC screening program where they provide education on SBE and provide breast ultrasonography as well on top of CBE. Women with suspected breast conditions are referred to BC clinics conducted in several hospitals in the country.

Despite these awareness programs conducted at the national level, our study depicts a significant lack of practices of early detection methods. Although more than 80% were aware of SBE, only 15% have been practicing SBE in our study population. Similar observations were seen for CBE and screening mammography. All patients presenting with T4 and T3 disease had not practiced any form of early detection method and presentation delay.

When we look at regional studies similar findings have been reported. A study performed in India showed that despite having knowledge about the technique of performing SBE, the respondents did not have a positive attitude toward it and were reluctant to practice SBE.[14]

Another study performed in Malaysia focused on the knowledge, attitudes, and practices regarding SBE among women in a sub urban area. It showed that enhancement of BC awareness and focusing on recognized barriers by healthcare professionals with the involvement of spouses, family, and community would have a substantial beneficial impact on BSE practice.[15]

A study done regarding the knowledge of breast self-examination among female students in the Faculty of Health Care Sciences, Eastern University, Sri Lanka showed that the overall knowledge regarding the BC was good including knowledge about warning signs and treatment options but average knowledge in risk factors except family history. Majority of students have heard about breast self-examination but less than half of the students had practiced breast self-examination in their life.[16]

These studies show a universal problem in the lack of practices of early detection methods and this highlights the importance of the need for attitudinal change among people to improve the practice of early detection methods. This should be a factor to be considered in future educational programs.

Another important aspect that we identified in our study is that 47.5% (n=188) of participants had a delay in presentation for seeking treatment. As mentioned, the common causes for this delay have been difficulty in accessing healthcare, not being able to find time due to family and social commitments, and not being aware where to get treatment.

A cross-sectional study conducted in Malaysia showed that delayed presentation was significantly associated with perception of symptoms being harmless.[17]

A study done in Sri Lanka regarding presentation, diagnosis, and treatment delays in BC showed that low family monthly income and poor knowledge on BC were associated with presentation delay.[18]

Another cross-sectional study which nested in an ongoing prospective cohort study of BC patients in Indonesia revealed that the most frequent reasons for the delay in presentation were lack of awareness of the cause of symptoms (41.5%), low perceived severity (27.7%) and fear of surgery intervention (26.2%).[12]

Although there is heterogeneity among these studies, the common factor among them that delayed presentation was fear of treatment and low perception about symptoms. In our study, we went into deeper analysis of the factors that could lead to presentation delay. Fear or embarrassment of clinical examination although not well reported was an important factor in our study which could relate to culture. Our study also demonstrated social stigma and family commitments also as important factors leading to presentation delay.

Several studies have investigated the impact of delay in the presentation of BC and have found that presentation delay increased the likelihood of diagnosis with an advanced stage. A study done in the UK between 1975 and 1990 involving 2964 women showed that 32% (942/2964) of patients had symptoms for 12 or more weeks before their first hospital visit and 32% (302/942) of patients with delays of 12 or more weeks had locally advanced or metastatic disease, compared with only 10% (210/2022) of those with delays of <12 weeks (P<0.0001).[19] Another cross-sectional study was done in Iran showed significant associations between delay in presentation and the late stage disease (P=0.01) and bigger tumor size (P=0.004).[20] Our study too depicts the same with P=0.000 in women who are not practicing SBE and women with presentation delay being diagnosed with advanced stage of cancer.

Limitations of the study

We have not evaluated other outcomes of presentation delay such as survival rates, aggressive treatments, or patient and caregiver burden.

CONCLUSION

Our study population representing Sri Lankan women depicts a good knowledge related to BC symptoms, risk factors, and methods of early detection. However, only a small percentage is practicing them. Almost half of our population had a delay in presentation due to various factors. Considering the fact that early stage BC directly improves the survival, it is important that we promote awareness and good practices that would lead to early detection and diagnosis.

Recommendations

Our research focused on preventive healthcare measures to improve the outcome of BC patients. Our recommendations are to implement more primary health care-based programs to highlight the gravity of BC, improve the practice of early detection methods, and to regularly address barriers and myths related to BC. By exploring these aspects, we can improve the BC care and control in Sri Lanka.

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STATEMENTS AND DECLARATIONS

Ethical clearance has been obtained from Colombo South Teaching Hospital and necessary approval was obtained from relevant institutions.

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JS, GDS and KW- Definition of intellectual content, literature survey, prepared the first draft of manuscript, implementation of the study protocol, data collection, data analysis, manuscript preparation and submission of article; **YC, HG, HWR**- Concept, design, clinical protocol, manuscript preparation, editing, and manuscript revision; **JN, MS**- Review manuscript.

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