



Awareness, Attitudes, and Behavior toward Breast Cancer Screening Measures Among Female Teachers

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Abstract

Breast cancer (BC), the most common cancer in women globally, significantly impacts on health. Early detection through breast self-examination (BSE), clinical breast examination (CBE), and mammography is crucial for reducing mortality. This study examines awareness, attitudes, and behavior toward BC screening among female schoolteachers in Giriulla Educational Zone, Sri Lanka. A descriptive cross-sectional study was conducted with 240 female teachers, aged 22-55, using convenience sampling. Data were collected through a self-administered questionnaire and analyzed descriptively. With a response rate of 93.7% (225 teachers), most participants were aged 41-50 (38.2%), and 81.3% were married. About 45% held bachelor's degrees. Awareness was notable: 53.1% knew about CBE, and 23.8% knew about mammography, but 65.5% were unaware of recommended examination start ages. Although 97.3% recognized the importance of screening, 68% hesitated toward BSE. Behavioral engagement varied, with 53.8% practicing BSE monthly, but CBE and mammography were underutilized (78.2% and 98.2%, respectively). The study highlights the need for enhanced awareness and education initiatives among female schoolteachers to address knowledge gaps and promote practical engagement in screening measures, crucial for early detection and reducing BC mortality rates.

Keywords: Breast cancer; clinical breast examination; Self-breast examination; mammography, female schoolteachers

Introduction

According to the World Health Organization (WHO), 7.6 million people die from cancer worldwide each year, and approximately 70% of these deaths could be prevented (Bray & Soerjomataram, 2015). Breast cancers (BC) alone account for 45% of all cancer cases in females and are the second leading cause of death. The incidence of BC in Sri Lanka is 7.7 per 100,000 and approximately 1500 cases of BC are diagnosed annually (Ranasinghe et al., 2013).

Early detection is widely believed to reduce BC mortality by allowing intervention at an earlier stage of cancer progression (Nur, 2010). As BC is a progressive disease, early detection of small tumors, which are likely to be at an early stage, significantly improves the prognosis and increases the likelihood of successful treatment (Kumar, 2021). Clinical data show that women diagnosed with early-stage BC are less likely to die of the disease than those diagnosed with more advanced stages of BC. However, most cases are reported in late stages due to a lack of knowledge and the lack of formal screening programs (Temiz et al., 2008). According to the American Cancer Society's recommendation Early detection of BC can be facilitated by Breast Self-Examination (BSE), Clinical breast examination (CBE), and Mammography (Temiz et al., 2008). The practices of women regarding BSE, BCE, or mammography are influenced by their awareness, attitudes, socio-demographic characteristics, and cultural factors.

Awareness of early diagnosis and screening are crucial in influencing BC screening behaviors, yet many patients in developing countries are diagnosed at advanced stages due to low awareness of early warning signs and screening techniques, as well as poor prognosis (Al-Ismaili et al., 2020; Heena et al., 2019). Studies indicate that awareness levels of early detection measures, CBE, BSE, and mammography are generally low (Sadhwi et al., 2019; Ojewusi & Arulogun, 2016). Attitudes towards BC screening vary significantly by culture, religion, and education (Heena et al., 2019). A study conducted among adolescent females in Colombo revealed significant deficiencies in their knowledge, attitudes, and practices related to breast cancer (Ranasinghe et al., 2013). However, research on BC awareness and practices in the general population of Sri Lanka remains limited. Therefore, this study aims to evaluate the awareness, attitudes, and behavior toward BC screening among female schoolteachers.

Materials and Methods This cross-sectional descriptive study was conducted among female schoolteachers in selected schools within the Giriulla educational zone. It involved a multi-center approach, including six schools: Sri Rahula National School, Humbuluwa Central College, Rathanalankara Maha Vidyalaya, Madawala Maha Vidyalaya, Narammala Central College, and Narammala Maha Vidyalaya. Participants were purposely recruited according to the Kothari formula (Kothari 2004), resulting in a sample size of 240 female teachers. Participants

were included in the study after obtaining written informed consent from each of them. Data collection was carried out using a validated, structured questionnaire developed by the researcher. The questionnaire gathered information on socio-demographic characteristics, awareness of BC screening measures, attitudes toward BC screening measures, and behavior of BC screening measures. The instrument's validity was assessed through content validity by an expert team, and modifications were made based on their feedback. The instrument was pre-tested on 10 teachers who were not part of the main study. The retrieved questionnaires were organized, coded, and analyzed using the Statistical Package for the Social Sciences (SPSS) version 21. Data were descriptively analyzed to obtain the frequencies and percentages. This study is ethically cleared by the Ethics Review Committee of the National Hospital of Sri Lanka, Colombo.

Results and Discussion

Two hundred twenty-five teachers (93.7%) responded to the questionnaire. Table 1 presents the socio-demographic data of the participants. From the sample, most of the participants were aged between 41 to 50 years (38.2%). The majority were Sinhala Buddhists (95.1%), and most were married (81.3%) with 62.2% having 1-2 children. Additionally, 44% of the teachers held a bachelor's degree. Notably more than 95% of teachers do not have a history of BC.

Table 1. Socio-demographic data of the participants

Variable	Frequency	Percentage	Variable	Frequency	Percentage
Age			Children		
20-30	25	11.1%	None	49	21.8%
31-40	56	24.9%	1-2	140	62.2%
41 -50	86	38.2%	3-4	31	13.8%
>50	58	25.8%	>4	05	2.2%
Religion			Highest Education		
Buddhist	214	95.1%	Diploma	42	18.7%
Hindu	02	0.9%	Bachelors	99	44%
Islam	02	0.9%	Masters	15	6.7%
Christian	07	3.1%	Others	69	30.7%
Marital Status			History of BC		
Single	37	16.4%	Yes	10	4.4%
Married	183	81.3%	No	215	95.6%
Divorced/ widowed	05	2.3%			

Awareness of BC screening measures among female teachers

Figure 1 illustrates the participants' awareness of BSE, CBE, and mammography. From the sample, 85.3% of teachers were aware of SBE, and 93.8% were aware of CBE. However, many teachers were not aware of mammography (57.3%). Most of the participants

were aware of BSE and CBE. However, the proportion of participants who had heard of BSE was lower compared to CBE, and awareness of mammography was the least among the three. These findings provide a comprehensive picture of BC awareness among teachers, highlighting significant areas where awareness is relatively high (SBE and CBE) and where there is room for improvement (mammography).

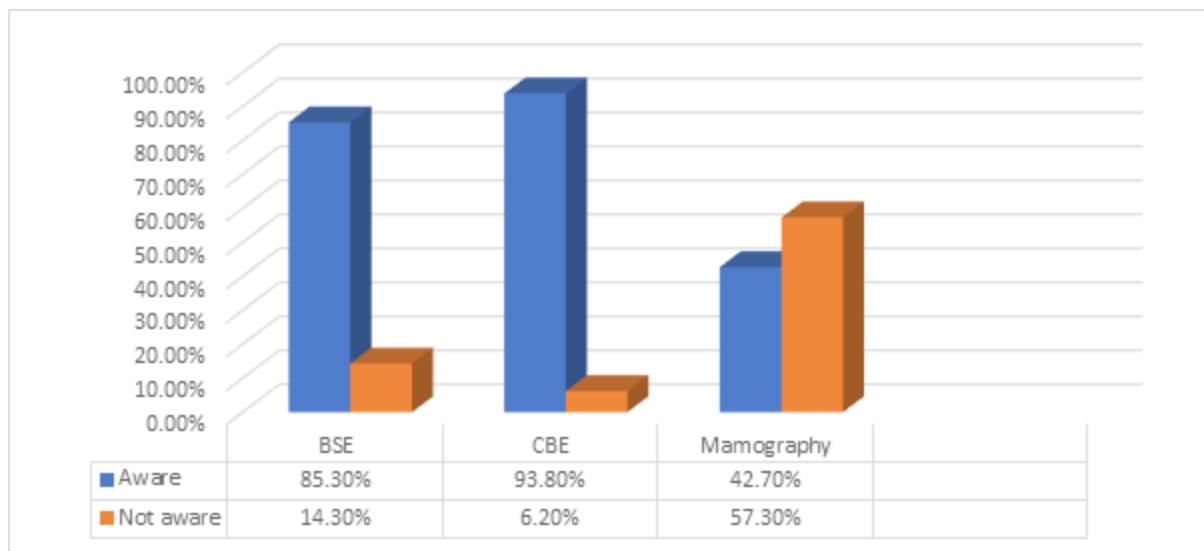


Figure 1. Awareness of BC screening measures among female teachers

These findings provide a comprehensive picture of BC awareness among teachers, highlighting significant areas where awareness is relatively high (SBE and CBE) and where there is room for improvement (mammography). In line with current findings, Ojewusi & Arulogun (2016) found that 76.2% of their participants were aware of SBE, 53.1% were aware of CBE, and only 23.8% were aware of mammography. The current study shows higher awareness of both SBE and CBE but similarly low awareness of mammography.

An Indian study found that only 35.68% of participants were aware of BSE, in contrast to the current study. Additionally, 71.5% were unaware of mammograms (Sadhwi et al., 2019). This study indicates a much lower level of awareness compared to the current study, suggesting that the teachers in the current study might have better access to health education or that targeted awareness campaigns have been more effective. Al-Ismaili et al. (2020) reported that

88.1% of their participants had good awareness of BSE, 71.1% were aware of CBE, and 68% had good knowledge of mammography. Compared to these findings, the current study shows a slightly lower awareness of SBE and CBE but a significantly lower awareness of mammography. This disparity highlights the need for enhanced educational efforts specifically targeting mammography, even in populations where general BC awareness is relatively high. This disparity could be due to the greater accessibility and lower cost of SBE and CBE compared to mammography, which requires specialized equipment and is more expensive (Sadhwi et al., 2019). Additionally, public health campaigns often focus more on SBE and CBE due to their simplicity and cost-effectiveness. Cultural and social factors might also play a role, as there could be less emphasis on mammography in education and awareness programs.

The current study highlights significant gaps and some improvements in public awareness about BC

screening practices. Notably, 45.3% of participants knew the appropriate time to start BSE (from 20 years), and 48.4% were aware of how often it should be performed (monthly). These records show a marked improvement compared to Temiz et al. (2008), where only 6.7% knew the correct frequency for BSE. This suggests that awareness campaigns and educational efforts may have had some success over the years in increasing knowledge about BSE. However, when it comes to CBE, the current study found that only 28.4% of participants knew the recommended frequency (three yearly), which is still higher than the 5.7% reported by Temiz et al. (2008). Despite this slight improvement, the low percentage indicates that more focused education on CBE is necessary. The awareness regarding mammography

is particularly concerning. Only 22.2% of participants in the current study knew the appropriate age to start mammography (after 50 years old), and a mere 8.4% were aware of how often it should be performed (every two years). This is consistent with the findings of Ojewusi & Arulogun (2016), where 65.5% did not know when to start mammography, highlighting a significant gap in public knowledge. The persistently low awareness rates in both studies suggest that information about mammography is not reaching the public effectively.

Attitudes of BC screening measures among female teachers

Table 2 shows the responses to the statements for attitudes toward BC Screening Methods.

Table 2. Attitudes Toward BC Screening among Female Teachers, N=225

Statements	Agree n(%)	Disagree n(%)	Not sure n(%)
I think that BC can be cured by early diagnosis	219 (97.3)	4 (1.7)	2(1%)
I can find a BC by myself	100 (44.5)	100 (44.5)	25 (11)
I am afraid to detect BC by myself	188 (83.6)	20 (8.8)	17 (7.6)
I think that screening for abnormality of the breast is important and useful	223 (99.1)	2 (0.9)	0 (0)
I am embarrassed to do BSE/CBE	72 (32)	100 (44.5)	53 (23.5)
I think that touching my breast to someone else is disgraceful	72 (32)	128 (56.8)	25 (11.2)
I think that BSE and CBE are painful procedures	54 (24)	121 (53.7)	50 (22.3)

The majority of the participants (97.3%) in this study expressed a strong belief in the efficacy of early detection in curing BC, with almost all participants (99.1%) agreeing that screening for abnormality of the breast is important and useful. This underscores the widespread awareness of the importance of screening for abnormalities in breast health. However, nearly half (44.5%) were not confident that they could find BC themselves. A comparison with the findings of Heena et al. (2019) reveals that a significant proportion of participants (53.4%) also expressed doubts about their ability to detect abnormalities in their breasts through self-examination. However, the level of fear associated with self-examination was markedly lower in their study (2.6%) compared to the current findings

(83.6%). Interestingly, while 83.6% in the current study were afraid to check for BC themselves, only a minority (2.6%) felt this fear in another study (Heena et al., 2019). It is possible that societal perceptions and attitudes towards BC screening have evolved, leading to increased awareness but also heightened fear or anxiety associated with self-examination.

Behavior of BC screening measures among female teachers

The current study reveals a significant gap in the behavior of BC screening methods among participants. Specifically, 54.2% of participants have performed a BSE, with more than half (53.8%) adhering to the

recommended monthly practice. In contrast, a study by Nur (2010) indicated that only 43.9% of teachers had ever conducted a BSE, and a mere 10.5% did so monthly. This suggests an improvement in the current study's population regarding the regularity of BSE practice compared to the teachers surveyed by Nur. Despite this improvement, the uptake of CBE and mammography remains alarmingly low. In the current study, 78.2% of participants had never undergone a CBE, and 98.2% had never had a mammogram. Similarly, Nur (2010) found that only 22.3% of teachers had ever had a CBE, and among women over forty, just 37.5% had received at least one mammogram. These statistics indicate a persistent reluctance or lack of access to professional screening methods across different populations. Alduraibi (2020) further highlights this issue, reporting that only 32.4% of participants had ever practiced BSE, with a notable 67.6% never attempting it. This reinforces the need for enhanced awareness and education on the importance of regular BSE and professional screenings. The consistent findings across these studies underscore the critical need for targeted public health interventions to increase the adoption of both self-examinations and professional BC screenings. Improving education, accessibility, and encouragement from healthcare providers could play a pivotal role in bridging these gaps and fostering better preventive health practices among women.

The current study highlights an inconsistency in BC screening behavior among participants: despite high awareness levels, actual engagement in screening procedures remains significantly low. Specifically, more than 90% of participants are aware of CBE, yet 78.2% have never undergone one. Similarly, although 42.7% of participants are aware of mammograms, 98.2% have never had one, even though nearly 30% of the participants are over the age of 50, a demographic at higher risk for breast cancer. Similar findings have been reported in various studies. For instance, a study by Soyer et al. (2007) found that while awareness of CBE was high, actual utilization was low. This pattern was also observed in mammography awareness and

utilization. The disparity between awareness and behavior is a well-documented issue. According to a study by Whelehan et al. (2015) found that lack of knowledge about the importance of early detection, fear of diagnosis, and limited access to healthcare services may cause the disparity.

Conclusions

This study highlights the awareness, attitudes, and behavior toward BC screening among female teachers. While many participants were knowledgeable about SBE and CBE, awareness of mammography was notably lower. Participants generally believed in the efficacy of early diagnosis and the importance of screening but lacked confidence in their ability to self-detect BC and often felt fear and embarrassment about undergoing SBE or CBE. Despite high awareness, there was a substantial gap in behavior, with most participants having never undergone a CBE or mammogram. This discrepancy, also observed in other studies, suggests that high awareness does not necessarily lead to practice due to factors like fear of diagnosis, limited knowledge about early detection, and restricted access to healthcare services. The results underscore the need for targeted public health interventions to improve the behavior toward BC screening. Educational efforts should focus on addressing fears and misconceptions about BC screening, enhancing confidence in self-examination techniques, and increasing access to professional screening services. Encouragement from healthcare providers and robust public health campaigns could play pivotal roles in bridging the gap between awareness and behavior, ultimately leading to better preventive health behaviors among women.

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