Breast Cancer Screening among Women in Thailand: Analyses of Population-Based Household Surveys

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Objective: *The incidence of breast cancer is the highest among female cancers in Thailand and has been steadily increasing during the past few decades. The present study aimed to determine uptake rates of breast cancer screening including breast self-examination (BSE), clinical breast examination (CBE), and mammography screening, and to identify enabling factors and barriers associated with screening uptake.*

Material and Method: *Secondary data from two population-based household surveys were used, the 2007 Health and Welfare Survey that comprised 18,474 women aged 20 years and older, and the 2009 Reproductive Health Survey that comprised 26,951 women aged 30 to 59 years. Multivariate logistic regression analyses were performed to identify factors associated with screening.*

Results: *In 2007, the uptake rate of BSE was 40.1% (18.4% for monthly BSE), 29.0% for CBE, and 5.9% for mammography. In 2009, the uptake rate of any type of breast examination was 57.9%, while the mammography rate among women who had breast examinations was 29.6% (10.1% of all women in 2009). Frequency of CBE was found to be positively associated with BSE and mammography screening. Factors independently associated with screening uptake were having education at the bachelor's level or higher, being in the richest wealth quintile based on household asset index, and being covered by the Civil Servant Medical Benefit Scheme. Women living in Bangkok metropolis and in the municipal areas of other provinces had higher rates of mammography, while women living in the north and northeast regions and non-municipal areas were more likely to perform BSE and have CBE performed than those living in Bangkok and municipal areas, respectively. Common factors associated with less screening across the two surveys were age 55 and over, being single or widowed, being Muslim or Christian, and having no health insurance. Lack of knowledge and awareness of breast cancer screening were found to be barriers for screening among all women, especially those with low educational levels.*

Conclusion: *A low uptake of monthly BSE and mammography was observed. Early detection and awareness should be encouraged through proper BSE technique and effective CBE. Increased uptake of CBE should lead to a higher rate of mammography. Increased knowledge, awareness, and participation in screening activities for selected groups, such as older women, those who are not married, non-Buddhists, and those with low education are recommended.*

Keywords: *Breast cancer screening, Breast self-examination, Clinical breast examination, Mammogram, Mammography, Thailand*

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Breast cancer is the most common cancer affecting women worldwide[1]. Incidence rates remain highest in more developed regions, but mortality is relatively much higher in less developed countries due to lack of early detection and access to treatment facilities[2]. According to the most recent Thailand cancer registry report 2007 to 2009, breast cancer was the most common cancer among Thai women in 2008 with estimated age-standardized incidence rate of 26.4 per 100,000 women[3]. Cancer registries in Thailand reveal an increasing incidence of breast cancer, particularly for early stage disease, highlighting the effectiveness of breast cancer screening[4], and awareness campaigns[5].

Early detection and treatment of breast cancer in its early stages are considered the most promising approaches to reduce breast cancer mortality rates[6]. The American Cancer Society recommends early detection of breast cancer through breast self-examination (BSE), clinical breast examination (CBE), and mammography[7]. Mass population screening can be advocated for breast cancer using mammography screening in countries where resources are available for wide coverage of the population. However, CBE could be implemented in limited resource settings when the necessary evidence from ongoing studies becomes available[8]. Limited access to early detection and

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