



Factors influencing the stages of breast cancer at the time of diagnosis in Thai women

Sirinoot Buranaruangrote, RN, MNS, PhD^{a,b,*}, Siriorn Sindhu, RN, DNSc^c,
Deborah K. Mayer, RN, PhD, AOCN, FAAN^d, Ameporn Ratinthorn, RN, PhD^c,
Thiravud Khuhaprema, MD, FICS, FRCST^e

^a Faculty of Graduate Studies, Mahidol University, Thailand

^b Srinakharinwirot University, Thailand

^c Faculty of Nursing, Mahidol University, Thailand

^d School of Nursing, UNC-Chapel Hill, NC, USA

^e National Cancer Institute (NCI) of Thailand, Bangkok, Thailand

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KEYWORDS

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Summary

Background: Early diagnosis of breast cancer leads to early treatment therefore improving women's health. However, most Thai women are diagnosed at a late stage.

Objective: This cross-sectional correlational study was designed to explore factors influencing the diagnosis of early stage breast cancer in Thai women.

Method: Thai women ($n=400$) newly diagnosed breast cancer at all clinical stages from public hospitals in Bangkok Metropolitan completed a questionnaire about knowledge of breast cancer and screening. The questionnaire addressed pre-diagnosis data about: (1) health care provider's recommendations to undertake breast screening, (2) health coverage for mammography (MM) costs and (3) regularity of breast screening behaviors in terms of breast self-examination (BSE), clinical breast examination (CBE) and MM including stage breast cancer at diagnosis. Data analysis was determined by PASW Statistics version 18 as univariate and multivariate logistic regression.

Results: Health coverage for MM costs and all three behaviors were significantly related to and could predict the early stages breast cancer at diagnosis ($p<0.05$): health coverage for MM costs (OR=0.32, 95% confidence interval [CI], 0.17–0.63), BSE (OR=8.08, CI 95%, 3.93–16.63), CBE (OR=12.54, CI 95%, 2.29–68.65) and MM (OR=5.89, CI 95%, 1.13–30.73).

* Corresponding author at: 200/11 Soi Charunsanitwong 24, Charunsanitwong Road, Bangkok Noi, Bangkok 10700, Thailand.
Mobile: +66 89 478 9478.

E-mail addresses: srnnak@yahoo.com (S. Buranaruangrote), siriorn.sin@mahidol.ac.th (S. Sindhu),
dmayer@unc.edu (D.K. Mayer), ameporn.rat@mahidol.ac.th (A. Ratinthorn), tkhuhaprema-v2@hotmail.com (T. Khuhaprema).

Conclusions: All three behaviors are essential and related to one another. CBE on a regular basis is the best predictor for early stages breast cancer at diagnosis in Thai context. Nurses should provide information and teach including re-check the women's skills to perform BSE regularly.
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Background

Detecting breast cancer can be achieved by screening modalities such as, breast self-examination (BSE), clinical breast examination and mammography. Of these, mammography is the most effective for detecting breast cancer in the earliest stage (Klabunde & Ballard-Barbash, 2007). It can reduce mortality by 30% while BSE has no benefit in reducing mortality (Hackshaw & Paul, 2003; Semiglazov, Sagaidak, Moiseyenko, & Mikhailov, 1993; Thomas et al., 1997, 2002). Detecting breast cancer at the early stage onset is a key to increasing survival. Thus, health care organizations, especially those in developed countries, have employed mammography as a standard method for breast cancer screening (American Cancer Society [ACS], 2008).

In Thailand early breast cancer detection is limited by policy and resources. Mammography is used for diagnosis rather than screening. Only BSE is active as a mass screening which has been established since 2003 (Ekachampaka & Wattanamano, 2008). A report on cancer in Thailand, published in 2010, found breast cancer to be the most common cancer in women since 2001 when the estimated age-standardized incidence rate (ASR) was 20.9 per 100,000 (Attasara, Srivatanakul, & Sriplung, 2010). Its incidence is also increasing annually. Moreover, a hospital based cancer registry in three consecutive years reported that there were no women in the non-invasive stage while more than 75% were invasive stages breast cancer at diagnosis. Of these, the majority were at stage II (National Cancer Institute of Thailand, 2007, 2008, 2009). In stage II, cancer cells have already spread outside the ducts or lobules of the breast to surrounding tissue (American Cancer Society, 2008). As a result, Thai women face the possibility of premature death due to the fact that at diagnosis they present at a late stage. Limited research has been conducted on the factors affecting the stage of breast cancer at diagnosis in Thai women. This cross-sectional correlation study may inform the understanding of the facilitators and barriers to early stage breast cancer diagnosis. The purpose of this study was to explore the predictive factors related to the early stage breast cancer at diagnosis.

Conceptual framework

According to Green and Kreuter (1991), the PRECEDE framework takes into account the multiple factors associated with health status and helps to arrive at a highly focused subset of those factors as targets for intervention. It also generates specific objectives and criteria for evaluation and needs to be diagnosed by policy implementation as appropriate with the situation and problem. Therefore, it contains features that correspond appropriately with factors influencing health determinants i.e., stage of breast cancer at diagnosis in this study. Based on this framework and related research,

the study variables have been outlined and are depicted in Fig. 1.

Predisposing factors are the antecedents providing the rationale or motivation for specific behavior, e.g., individual knowledge, personal preferences, attitudes, beliefs, perceptions and existing skills (Green & Kreuter, 1991). Hall et al. (2008) suggest that knowledge about breast cancer and screening would dispel misperceptions of the disease and eliminate negative attitudes toward prevention and treatment while promote the understanding that survival is possible with early diagnosis. It is a crucial factor that will contribute to the shift in women's attitudes, beliefs and perceptions to change screening behaviors. Anderson et al. (2003) also assert that women's education including knowledge about breast cancer and screening are important elements in early diagnosis. In Thailand, health care providers teach BSE through health volunteers such as community based health workers, who subsequently teach and encourage women in their villages to perform BSE (Ekachampaka & Wattanamano, 2008). Not only are Thai women inadequately aware of BSE, overall education levels are generally poor. In 2008, as high as 45.2% of the 30–59-year-old women had an education less than the elementary level and only 5.2% of women had received education at the post-secondary, diploma, undergraduate and graduate levels (National Statistical Office [NSO], 2008). Higher levels of education are one of the most important predictors of mammography utilization affecting early diagnosis (Anderson et al., 2003; Ho et al., 2005). Older women (aged over 60 years) are predisposed to a higher chance for developing breast cancer whereas younger have more disease severity than older (American Cancer Society, 2008; Balachandran, Warriar, & Pavithran, 2007; Pegram & Casciato, 2009). Age is therefore another factor that impacts on the stage at diagnosis. This study focused on these three factors: age, knowledge about breast cancer and screening, and educational attainment.

Reinforcing factors are incentives for a behavior to persist or reoccur, e.g., advice from significant others (Green & Kreuter, 1991). In general, Thai women accept and follow health information given to them by their health care provider (Sangchan, Tiansawad, Yimyam, & Wonghongkul, 2008). To obtain and reimburse mammography service fees, in practice, physicians must prescribe and endorse the needs of testing either for screening or diagnostic purposes. Therefore, health care provider's recommendation and physician's mammography prescription may influence the stage at diagnosis.

Enabling factors are antecedents to behaviors allowing a motivation to be realized, e.g., income and health insurance (Green & Kreuter, 1991). Between 2005 and 2007, approximately 35–40% of Thais in the poorest group attended health centers which are understaffed and have a lack of services while 50% of those in the richest group chose private hospitals which typically include a variety of facilities for services (Faramnuayphol, Ekachampaka, Taverat, & Wattanamano,

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