



Factors Affecting to Breast Cancer Screening for Breast Self-examination among Women in Phitsanuloke Province

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ABSTRACT

Introduction: Breast cancer is majority problems for women worldwide, especially in Thailand had incidence rate of breast cancer increasingly. Breast cancer screening can found early new patient.

Objective: Research aimed to study factors affecting to breast cancer screening for breast self-examination among women in Phitsanuloke Province, Thailand.

Methods: Cross-sectional study was carried out 16,202 women aged 35-60 years which be registered in Phitsanuloke Province, in fiscal year 2020, and sample size calculating used Daniel formula for 210 cases, systematic random sampling was determine. Data collected by questionnaires composed of 4 parts including, characteristics, knowledge, health perception, breast cancer screening. In addition to check questionnaire standardization, validity was checked by 3 experts and try out testing reliability about 0.86. Data analyzed using statistical as Pearson product moment correlation coefficient and Stepwise multiple regression analysis.

Results: Knowledge factors including knowledge of breast cancer, knowledge of breast cancer screening had mean score with high level ($\bar{x}=2.18$, S.D.=0.792), health perception including risk perceive, severe perceive, benefit perceive, problem perceive and confidence of breast self-examination had mean score with moderate level ($\bar{x}=2.46$, S.D.=0.49). Association analyzed found that knowledge of breast cancer, health perception was associated with breast cancer screening for breast self-examination among women with statistic significant ($r=0.208$, $P=.002$, $r=0.174$, $P=.012$, respectively). Prediction model analyzed reported five selected factors including; confidence of breast self-examination ($P<.001$), take information from village health volunteers ($P<.001$), take information from partner/family member ($P=.002$), no alcohol drinking ($P=.001$), benefit perceive ($P=.006$), respectively, overall selected factors accounted for 25.9% ($R^2=0.259$) of the variance breast cancer screening.

Conclusion: We should disseminate women' knowledge about initial symptoms of breast cancer, breast self-examination practice. Ministry of Public Health should provide the fundamental guideline for breast self-examination to health care providers at primary health care center to serve as a guideline for women.

Keywords: Breast self-examination; Breast cancer screening

Introduction

Breast cancer is a major health problem in worldwide, especially, the incidence rate of breast cancer occurred in both developed country and developing country [1]. The report from American cancer society showed the breast cancer accounting for 23% of all female cancer in 2002. It also accounted for

17.9% of all cancers for both sexes combined, which is the second highest cancer prevalence rate even when male cancers are included [2]. Breast cancer is not only an urgent public health problem in developed countries but it is also becoming an increasingly urgent problem in developing countries, where incidence rates have been increasing by up to 5% per year [3]. In Thailand,

breast cancer as the first leading cause of cancer among Thai women. In 2000 an estimated age-standardized incidence rate (ASR) for female breast cancer was 20.5 per 100,000 women. The highest incidence rate of female breast cancer was in Bangkok (ASR=24.3), and the lowest was in Nakhon Phanom (ASR=10.1) [4]. A particular concern is that the national incidence of newly diagnosed of breast cancer has been continuously increasing over the three year periods from 1992 to 2000. For the periods 1992-1994, 1995-1997 and 1998-2000 the national ASRs were 16.3, 17.2 and 20.5 per 100 000, respectively. [4,5,6] Furthermore, when Thai women are first diagnosed, they tend to have larger tumors and to be at a more serious stage of the disease. Cancer Registry data have shown that there is a high prevalence of late-stage disease (56% at Stage III and IV) when patients receive treatment [7]. Similarly, Angsingh's study reported that 80% of Thai female breast cancer patients were detected at the advanced stage [8]. The late stage of disease and associated high mortality are seen as the result of delayed diagnosis and treatment [9]. Breast cancer screening can found early new patient. Ministry of Public Health have the breast cancer screening by 3 methods composed of breast self-examination: BSE, clinical breast examination: CBE, and mammography [10]. In present, we set the breast cancer screening by BSE for Thai women because BSE could have detected the breast cancer symptoms since in early stage about 80-90%. In additional, breast cancer patient who were diagnosed early stage (stage1 ,2), could be prompt treatment and increasing the survival rate 90%. Furthermore, the survival rate is increased in women diagnosed with the earliest stage of breast cancer (98%) as compared to women diagnosed with most advanced stage of 26% [11]. Hence, to reduce mortality from breast cancer, it is necessary to understand the factors causing the breast cancer screening for breast self-examination among Thai women in Phitsanuloke Province.

Objective

To study knowledge and health perception associated with breast cancer screening for breast self-examination among women in Phitsanuloke Province

Methodology

Cross-sectional study was carried out 16,202 women aged 35-60 year which be registered in Phitsanulok province, in fiscal year 2020. Sample size calculating used Daniel [12]. formula for 210 cases, systematic random sampling was determined.

Research instruments

Data collecting by questionnaires composed of 4 parts including,

Part 1: Characteristic of women were as follow: age, marital status, education completed, occupational, average family income, menstrual, child birth,

contraceptive used, health checking, family history of cancer, no smoking and no drinking.

Part 2: Knowledge variables were as follows: knowledge of breast cancer, knowledge for breast cancer screening. A categorical variable which had three categories, defined as "yes", "no" and "not sure". Scale items were composed of both positive and negative statements. For interpretation the score used Bloom theory [13] classified as 3 level such as; high level (score $\geq 80\%$) moderate level (score 61%-79%) low level (score $\leq 60\%$).

Part 3: Health perception variables were as follows: risk perceive, severity perceive, benefit perceive, barrier perceive and cues to action. Perceptions were measured on five-point Likert scales with response options ranging from strongly disagree, disagree, uncertain, agree, to strongly agree. Scale items were composed of both positive and negative statements.

Part 4: breast self-examination behavior variables were as follows: age to start BSE, frequency BSE, time for BSE practicing, step for BSE practicing, skill and confidence for BSE.

BSE were measured on five-point Likert scales with response options ranging from highest, high, moderate, low, lowest. Scale items were composed of both positive and negative statements.

For interpretation the score part 3 and part 4 follow as Best John W theory classified as 3 level such as; high level (score 3.67–5.00 (moderate level (score 2.34–3.66) low level (score 1.00–2.33) [14].

The questionnaire was checked for completeness and satisfactory content validity and approved by 3 experts in breast cancer field. The reliability of the Likert scales was tested on 30 breast cancer patients and try out testing reliability about 0.86.

Data analyses

Data analyzed using statistical as Pearson product moment correlation coefficient and Stepwise multiple regression analysis.

Results

Table 1 shows the basic characteristics of the study population. Average age was 30-50 years (67.10%) ($\bar{X}$ =46.18, S.D.=8.937, range 24-65 years). Most of the women (88.10%) were married or had a partner. Of the 166 women, 79% had primary education and 163 (77.60%) of women were agricultural workers. Average household income was 3,591.74 baht (US \$157) ($\bar{X}$ =3,591.74, S.D.= 5,698.212, range 0-50,000 baht). For breast cancer screening by breast self-examination within 1 year, 128 (61%) women practiced for BSE at least one time per month and one-third (39%) do not practice BSE. Regard to breast cancer information sources, more than 67.60% of women received breast cancer information from public health volunteers, while

79% received breast cancer information from family member or partner

Table 1 General characteristics of women (n=210)

Characteristics	Number	Percentage
Age group (years)		
< 30	3	1.40
30 – 50	141	67.10
≥ 50	66	31.40
Mean = 46.18, S.D.=8.937, Min =24, Max =65		
Marital Status		
Single	4	1.90
Married	185	88.10
Widowed/Divorced	21	10.00
Education		
Not study	15	7.10
Primary school	166	79.00
Secondary school	23	11.00
Diploma	3	1.40
Graduate or higher	3	10.50
Occupation		
No work, house work	22	10.40
Company general employee	1	0.50
Government service	4	1.90
Business	2	1.00
Merchant	18	8.60
Agriculture worker	163	77.60
Average family income (Baht/Month)		
< 5,000	185	88.10
5,000 – 15,000	19	9.00
> 15,000	6	2.90
Mean =3,591.74, S.D.=5,698.212, Min = 0, Max = 50,000		
Alcohol drinking		
No	186	88.60
Yes	24	11.40
Receive breast cancer information		
No	38	18.10
Yes	172	81.90
Receive from partner/family member		
No	44	21.00
Yes	166	79.00
Receive from village health volunteers		
No	68	32.40
Yes	142	67.60
Practice for BSE		
No	128	61.00
Yes	82	39.00

Table 2 presents the percentages of patients with high, medium and low knowledge about breast cancer, and high, medium and low perceptions of its symptoms. Knowledge factors including knowledge of breast cancer, knowledge of breast cancer screening had mean

score with high level ($\bar{X}$ =2.18, S.D.=0.792), health perception including risk perceive, severe perceive, benefit perceive, problem perceive and cues to action of breast self-examination had mean score with moderate level ($\bar{X}$ =2.46, S.D.=0.499).

Table 2 Level of knowledge and health perception

Knowledge and health perception factors	Levels (%)			Mean	SD
	High	Moderate	Low		
1. Knowledge	41.90	34.30	23.80	2.18	0.792
- Knowledge of breast cancer	28.10	51.90	20.00	1.91	0.691
- Knowledge for breast cancer screening	61.00	19.00	20.00	2.41	0.803
2. Health perception	46.20	53.80	-	2.46	0.499
- Risk perceive	93.30	6.70	-	2.06	0.250
- Severity perceive	58.60	40.00	1.40	2.57	0.524
- Benefit perceive	83.30	16.70	-	2.83	0.373
- Barrier perceive	71.40	24.30	4.30	2.67	0.554
- Cues to action	38.60	60.50	1.00	2.37	0.504

Table 3 to investigate the associations of all factors and breast cancer screening by breast self-examination. The result showed that factor was association with breast cancer screening by breast self-examination with statistics significantly including; occupation ($r=0.147$, $p\text{-value}=0.034$), Receive from partner/family member ($r=0.244$, $p\text{-value}<0.001$), receive information from

village health volunteers ($r=0.260$, $p\text{-value}<0.001$) No alcohol drinking ($r=0.195$, $p\text{-value}=0.004$), knowledge for breast cancer screening ($r=0.263$, $p\text{-value}<0.001$), benefit perceive ($r=0.297$, $p\text{-value}<0.001$) barrier perceive ($r=0.195$, $p\text{-value}=0.005$) cues to action ($r=0.365$, $p\text{-value}<0.001$), respectively.

Table 3 Association between characteristics of women knowledge, perceptions and breast cancer screening by breast self-examination.

Variables	Breast self-examination	
	Correlation (r)	p-value
Characteristics of women		
- Age group	0.052	0.454
- Marital Status	0.019	0.789
- Education	0.107	0.122
- Occupation	0.147	0.034*
- Average family income	-0.043	0.533
- Receive from partner/family member	0.244	0.000*
- Receive information from village health volunteers	0.260	0.000*
- No alcohol drinking	0.195	0.004*
Knowledge 0.208	0.002*	
- Knowledge of breast cancer	-0.052	0.457
- Knowledge for breast cancer screening	0.263	0.000*
Health perception 0.174	0.012*	
- Risk perceive	-0.021	0.764
- Severity perceive	0.016	0.818
- Benefit perceive	0.297	0.000*
- Barrier perceive	0.195	0.005*
- Cues to action	0.365	0.000*

Note: * $p\text{-value}<.05$

Table 4 the prediction model analyzed reported five selected factors can predicted the breast cancer

screening by breast self-examination including; confidence of breast self-examination ($p\text{-value}<0.001$),

take information from village health volunteers (p -value<0.001), take information from partner/family member (P -value=0.002), no alcohol drinking (p -value=0.001), benefit perceive (p -value=0.006), respectively, overall selected factors accounted for 25.9% ($R^2 = 0.259$) of the variance breast cancer

screening. The prediction model follows as: $Y = 1.078 + [0.248 * \text{Cues to action}] + [0.199 * \text{Receive information from village health volunteers}] + [0.195 * \text{Receive information from health partner}] + [0.259 * \text{No alcohol drinking}] + [0.209 * \text{Benefit perceive}]$.

Table 4 Factors predicting breast cancer screening by breast self-examination

Predicting factors	B	S.E.	Beta	t	<i>p</i> -value
1. Cues to action	0.248	0.253	-	-4.265	0.000
2. Receive information from village health volunteers	0.199	0.063	0.256	3.957	0.000
3. Receive from partner/family member	0.195	0.065	0.191	3.066	0.002
4. No alcohol drinking	0.259	0.060	0.198	3.235	0.001
5. Benefit perceive	0.209	0.093	0.169	2.775	0.006
Constant	1.078	0.085	0.160	2.471	0.014
Constant = 1.078, F = 14.267, P-value<0.001, R = 0.509, $R^2 = 0.259$					

Discussion

The prediction model analyzed reported five factors can have predicted the breast cancer screening by breast self-examination, overall selected factors accounted for 25.9% ($R^2 = 0.259$) of the breast cancer screening including; confidence of breast self-examination, take information from village health volunteer, take information from partner/family member, no alcohol drinking, benefit perceive, respectively. Confidence of breast self-examination is women felling to practice breast self-examination by themselves, and make sure to do this by step correctly. When the women practice breast self-examination, they have detected the abnormality on their breast area and know the criteria of abnormality symptoms. Similarly, the previous research found that women have the confidence of breast self-examination, it was associated the knowledge of breast cancer screening [15] and the research from Holmberg [16] reported that 98.5% of women who do not practice breast self-examination every monthly because they don't know the step of breast self-examination, so they don't have the confidence of breast self-examination. Information about the breast cancer and breast cancer screening was associated with breast self-examination because the mass media is the main factor to support all women received the information of breast cancer, information of breast cancer screening processing and the step technique for breast self-examination. Thus, women received the information about breast cancer from variety sources, for example, television, radio, newspaper, poster, family member/partner, health workers, village health volunteers, conference meeting. In additional, the information have many sources for women to search the breast cancer data but the information about breast cancer screening and breast self-examination not enough [17]. Because women who do not receive the breast cancer screening information,

maybe they don't know the technique for breast self-examination practicing. The research result showed that women received information from village health volunteer (67.60) and received information from partner/family member (79%), respectively. In this reason, the village health volunteers, family member or partner are very necessary to provide and support women to search the breast cancer information, especially how to do the breast self-examination. Because the village health volunteer is representing from health worker who worked in community and nearly all people in community. Moreover, village health volunteers are the key person to provide the knowledge and skill for breast self-examination practicing. The women' characteristic factor was associated with breast self-examination every monthly. Many research showed the evidence based to support that the characteristic of women effecting to breast self-examination with statistic significantly including no alcohol drinking, similarly the research by AL-Naggar [18]. Health perception about breast cancer symptoms is important factors, which influence help-seeking behavior and breast self-examination practicing, especially, the benefit perception. Other the benefit perception reasons related to breast self-examination practicing have been that women are scared of the diagnosis and surgery, and having to wait for an appointment [19]. Health perception towards seeking help can also be important factors affecting breast self-examination practicing. It has been found that women, who breast self-examination, are more reluctant to bother their GP, and they are more likely to express explicit fears about the consequences of diagnosis and treatment of the disease [20].

Conclusion

As a result, reported 5 factors affecting to breast cancer screening for breast self-examination among

women including; confidence of breast self-examination, take information from village health volunteers, take information from partner/family member, no alcohol drinking, benefit perceive, respectively. In order to, the researcher will be applied all factor to create the breast-self-examination motivation program for women practicing for every monthly.

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