

CHAPTER 4

RESULTS AND DISCUSSION

Results

This study used selected parts of the Health Belief Model (HBM) as a conceptual framework. The main factors were classified as 1) individual perceptions; perceived risk and severity of breast cancer, perceived benefits and barriers of BSE, 2) modifying factors; age, religion, educational level, income, socioeconomic status, and knowledge about breast cancer and breast cancer screening practices (BCSP), and 3) cues to action; physician's recommendation, family history of cancer or breast cancer, receiving information resources, family and social encouragement. Those factors, which identified to find the relationships with BCSP, were BSE, frequency, regularity of BSE performance, and intention to have a mammography by using the Chi-Square test at a level of significance of 0.05. Cramer's V was used to find the association level between some factors and BCSP. Three hundred healthy women who visited their relatives or friends in Songkhla Hospital were randomly selected for an interview.

The results from this study are presented in 5 parts with tables and descriptions.

Part 1 Demographic data of healthy women

Part 2 Breast cancer screening practices (BCSP).

Part 3 Knowledge about breast cancer and BSE.

Part 4 Individual perceptions of BCSP.

Part 5 Factors associated with BCSP in healthy women.

Part I. Demographic Data of Healthy Women

1.1 Women's Characteristics

The characteristics of the 300 healthy women in this study are presented in Table

1. Their age ranged from 20 to 60 years ($\bar{X} = 35.49$, S.D. = 11.94). The most common age in the sample (42%) was between 20-30 years. Most of them were Buddhists (82%) and married (67.3%). Fifty-two percent of healthy women in the study had primary education and 34% were unemployed, housewives or students. A majority had income less than 5,000 baht per month (73%). More than half (54.3%) felt that their income was adequate.

Of Muslim women, most (37%) were between 20-30 years old, married (72.2%) and had primary education. Seventy-four percent of Muslim women had income less than 5,000 baht per month and half of them felt that their income was adequate.

Table 1 Demographic characteristics of healthy women

Characteristic	Healthy Women		Total n(%)
	Buddhist n(%) (n=246, 82%)	Muslim n(%) (n=54, 18%)	
Age (\bar{X} = 35.49, SD.= 11.94)			
20 - 30	106(43.1)	20(37.0)	126(42.0)
31 - 40	54(22.0)	17(31.5)	71(23.7)
41 - 50	54(22.0)	7(13.0)	61(20.3)
51 - 60	32(13.0)	10(18.5)	42(14.0)
Marital status			
Single	63(25.6)	11(20.4)	74(24.7)
Married	163(66.3)	39(72.2)	202(67.3)
Divorced/Widow/Separated	20(8.1)	4(7.4)	24(8.0)
Educational background			
No schooling	8(3.3)	4(7.4)	12(4.0)
Primary school	126(51.2)	29(53.7)	155(51.7)
High school	40(16.3)	7(13.0)	47(15.7)
Diploma/Certificate	47(19.1)	11(20.4)	58(19.3)
Bachelor's degree or higher	25(10.2)	3(5.6)	28(9.3)
Occupation			
Unemployed/housewives/students	102(41.5)	22(40.8)	102(34.0)
Government officer	8(3.3)	-	20(6.7)
General employee	69(28.0)	13(24.1)	87(29.0)
Agriculturist/Fisher/Shop keeper	67(27.2)	19(35.2)	91(30.3)
Income/month			
Less than 5,000 baht	179(72.8)	40(74.1)	219(73.0)
5,000 - 10,000 baht	55(22.4)	12(22.2)	67(22.3)
More than 10,000 baht	12(4.9)	2(3.7)	14(4.7)
Socioeconomic status			
Adequate	136(55.3)	27(50.0)	163(54.3)
Inadequate	110(44.7)	27(50.0)	137(45.7)

1.2 Women's Breast Health Characteristics

It was found that only 8% of the subjects had a history of breast problems, a majority of which had occurred in the last 12 months (50%). Most women (92%) had no family history of cancer.

Table 2 Breast health characteristics of healthy women.

Characteristic	Healthy Women		Total
	Buddhist n(%) (n=246, 82%)	Muslim n(%) (n=54, 18%)	n(%)
History of breast problems			
Yes	20(8.1)	4(7.4)	24(8.0)
No	226(91.9)	50(92.6)	276(92.0)
Time of breast problems (months ago), \bar{X} = 6.98, S.D. = 33.52			
1-12	14(50.0)	1(50.0)	15(50.0)
13-24	2(7.1)	-	2(6.7)
>24	12(42.9)	1(50.0)	13(43.3)
Family history of cancer			
Yes	20(8.1)	4(7.4)	24(8.0)
No	226(91.9)	50(92.6)	276(92.0)

1.3 Women's Information about Breast Cancer

Most women (78.3%) had received information about breast cancer. Sources of information were mainly (69.8%) from mass media such as books, newspapers, magazines, television (TV.), radio, leaflets, and handbooks, followed by from a professional health care team, e.g. physicians and nurses (53.7%). The remainder was from health care volunteers, friends, and family member and relatives, in a similar proportion. Most of them had never received information about breast cancer disease and risk factors (66%), breast cancer prevention (71%), or mammography (93.3%). The information about BSE was the main topic they commonly received (70.3%).

Table 3 Information resources for healthy women.

Information about breast cancer	Healthy Women		Total
	Buddhist n(%) (n=246, 82%)	Muslim n(%) (n=54, 18%)	n(%)
Received information about breast cancer, at least one topic			
Yes	193(78.5)	42(77.8)	235(78.3)
No	53(21.5)	12(22.2)	65(21.7)
Sources of information*			
Professional health care team (e.g., physician, nurse)	132(20.9)	29(19.0)	161(53.7)
Health care volunteers	107(17.0)	29(19.0)	136(45.3)
Friends	115(18.2)	30(19.6)	145(48.3)
Family members/relatives	106(16.8)	26(17.0)	132(43.8)
Media (book, newspaper, magazine, TV., radio, leaflet, handbook, others.)	171(27.1)	39(25.5)	210(69.8)
Information received*			
-Breast cancer disease and risk factors			
Yes	87(35.4)	15(27.8)	102(34.0)
No	159(64.6)	39(72.2)	198(66.0)
-Breast cancer prevention			
Yes	74(30.1)	13(24.1)	87(29.0)
No	172(69.9)	41(75.9)	213(71.0)
-Breast self-examination			
Yes	176(71.5)	35(64.8)	211(70.3)
No	70(28.5)	19(35.2)	89(29.7)
- Mammography			
Yes	17(6.9)	3(5.6)	20(6.7)
No	229(93.1)	51(94.4)	280(93.3)

*More than one answer.

Part 2 Breast Cancer Screening Practices (BCSP)

2.1 Breast Self-Examination (BSE)

Regarding breast cancer screening practices of healthy women in this study, it was found that most women (57.3% from all subjects) had performed BSE. For the 54 Muslim women, it was found that most of them (59.3%) had not performed BSE. Among women who performed BSE, 43.6% did so more than once a month, 15.1% performed BSE monthly, 29.1% performed BSE every 2-4 months, and 12.2% performed BSE only each 5 months or more. Fifty-nine percent of the women performed BSE at least once a month and 42.4% of them performed it regularly. Among Muslim women who performed BSE, 50% performed BSE at least once a month and 50% performed BSE more than 2 months/time, and 54.5% performed it irregularly. From BSE, 82.6% of 300 healthy women in this study had never found any abnormal signs. Of 30 healthy women who did find abnormal signs on their breasts (17.4%), most of them (60%) sought consultation with a physician or nurse. Of Muslim women who performed BSE, most (90.9%) had never found any abnormal signs on their breasts. Those who did find abnormal signs on their breasts (9.1%) sought consultation with a physician or nurse. Among those who performed BSE, it was found that most of them had no family member (68%) or other person (62.7%) who encouraged them to do BSE. Among women who were had family members encourage them and had performed BSE, 90 of 96 women were encouraged by their husbands (93.7%). In addition, the majority of women (60.3%) had never had a physician's recommendation to do BSE.

This may be because all women in this study were healthy women, so most of them preferred not to visit a physician.

Table 4 Number and percentage of healthy women who performed BSE

BSE	Healthy Women		Total n(%)
	Buddhist n(%) (n=246, 82%)	Muslim n(%) (n=54, 18%)	
Performed BSE			
Yes	150(61.0)	22(40.7)	172(57.3)
No	96(39.0)	32(59.3)	128(42.7)
Among those women who performed BSE (n =172)			
-Frequency of BSE			
1 time/month	90(60.0)	11(50.0)	101(58.7)
2 months /time	60(40.0)	11(50.0)	71(41.3)
-Regularity of BSE (n = 172).			
Regularly	63(42.0)	10(45.5)	73(42.4)
Irregularly	87(58.0)	12(54.5)	99(57.6)
-Detection of abnormal signs by BSE (n = 172)			
Yes	28(18.7)	2(9.1)	30(17.4)
No	122(81.3)	20(90.9)	142(82.6)
-Reaction when finding abnormal signs (n = 30).			
Consult friends or relatives	3(10.7)	-	3(10.0)
Consult physician or nurse	16(57.1)	2(100.0)	18(60.0)
Keep quiet; don't consult anyone	4(14.3)	-	4(13.3)
Perform BSE more frequently	5(17.9)	-	5(16.7)
Having family member encourage/promote BSE			
Yes	80(32.5)	16(29.6)	96(32.0)
No	166(67.5)	38(70.4)	204(68.0)
Family members who encourage/promote women to perform BSE (n = 96).			
Husbands	80(93.0)	10(100.0)	90(93.7)
Daughters	4(4.7)	-	4(4.2)
Sisters	2(2.3)	-	2(2.1)
Having person/group of persons that encourage BSE			
Yes	91(37.0)	21(38.9)	112(37.3)
No	155(63.0)	33(61.1)	188(62.7)
Have had physician's recommendation to do BSE			
Yes	96(39.0)	23(42.6)	119(39.7)
No	150(61.0)	31(57.4)	181(60.3)

2.2 Intention to have a Mammography

Regarding the intention to have a mammography by the healthy women in this study, the majority of them (85.3%) had never heard or known about mammography before, and nearly all (94%) had never had a physician's recommendation to have a mammography. Sixty-three percent did not intend to have a mammography that year. Among those women who intended to have a mammography (37.3%) that year, interestingly, women aged between 20 to 39 years were more likely to do so than women aged 40 years. Only 2% had previously had a mammography (Table 5). Because mammography was recommended by age, so the researcher classified women into 2 groups by using their age. The first group of women, aged less than 40 years, was not recommended for a mammogram, while the second group, aged between 40–60 years, was recommended to have a mammography. The results showed that most women aged between 40-60 years old had never heard about mammography, and had not been recommended by their physician to have one, and most of them did not intend to have one in that year. Compared to Thai Buddhist women, it was found that there were very few Muslim women who had had a mammography. No Muslim women aged between 40-60 years old had ever had a mammography.

Table 5 Number and percentage of healthy women who intended to have a mammography

Mammography	Age < 40 yrs. n = 189(63.0%)		Age 40 yrs. n = 111(37.0%)		Total n(%)
	Buddhist n(%)	Muslim n(%)	Buddhist n(%)	Muslim n(%)	
Have heard about mammography before					
Yes	23(7.7)	6(2.0)	13(4.3)	2(0.7)	44(14.7)
No	130(43.3)	30(10.0)	80(26.7)	16(5.3)	256(85.3)
Have had a physician's recommendation to have a mammography					
Yes	5(1.7)	2(0.7)	9(3.0)	2(0.7)	18(6.0)
No	148(49.3)	34(11.3)	84(28.0)	16(5.3)	282(94.0)
Intention to have a mammography in this year					
Yes	46(15.3)	15(5.0)	46(15.3)	5(1.7)	112(37.3)
No	107(35.7)	21(7.0)	47(15.7)	13(4.3)	188(62.7)
Have ever had a mammography					
Yes	3(1.0)	1(0.3)	1(0.3)	-	5(1.7)
No	150(50.0)	35(11.7)	92(30.7)	18(6.0)	295(98.3)

Part 3 Knowledge about Breast Cancer and BSE

Regarding Table 6, the results showed that the subjects' knowledge of breast cancer and BSE ranged from 1-21 and the mean total score were 9.44 (S.D.=3.83). The mean score of each type of knowledge was quite low.

Table 6 Percentages and mean scores of women's knowledge about breast cancer and BSE

Variables	Range of score		\bar{X}	S.D.
	Possible scores	Subjects scores		
Knowledge about breast cancer and BSE	0-22	1-21	9.44	3.83
Type of knowledge				
-Risk factors of breast cancer	0-6	0-6	3.57	1.71
-General knowledge of breast cancer	0-5	0-5	1.96	1.23
-Knowledge about BSE	0-9	1-8	3.13	1.76
-Knowledge about breast cancer treatment	0-2	0-2	.79	.75

Regarding Table 7, the researcher classified knowledge and sub-aspects of knowledge into 3 levels by using \bar{X} and S.D. (For the scores of each item, see Appendix E) in order to explore the association between knowledge and BCSP later. The results showed that 59.7% of women had moderate knowledge about breast cancer and BSE with scores ranging from 1 to 21. Considering the types of knowledge, the majority of women had a moderate level of knowledge about risk factors and general knowledge about breast cancer, but had a low level of knowledge about BSE and treatment.

Table 7 The level of women's knowledge about breast cancer and BSE

Variables	Low n (%)	Moderate n (%)	High n (%)
Knowledge about breast cancer and BSE	53(17.7)	179(59.7)	68(22.7)
Types of knowledge			
-Risk factors of breast cancer	85(28.3)	115(38.3)	100(23.3)
-General knowledge of breast cancer	106(35.3)	164(54.7)	30(10.0)
-Knowledge about BSE	162(54.0)	118(39.3)	20(6.7)
-Knowledge about breast cancer treatment	122(40.7)	120(40.0)	58(19.3)

Part 4 Individual Perceptions: perceived risk and severity of breast cancer, perceived benefits and barriers to BCSP

Regarding Table 8, the results showed that the range of total scores of individual perceptions was between 23-115 and the mean total score was 71.50 (S.D.=10.13). However, the sub-aspects of individual perceptions revealed different findings. The mean score of women's perception of risk of breast cancer was quite high compared to other aspects.

Table 8 Range and mean score of women's individual perceptions (perceived risk and severity of breast cancer, perceived benefits and barriers to BCSP).

Variables	Range of score		\bar{X}	S.D.
	Possible score	Subjects score		
Individual perceptions	23-115	23-115	71.50	10.13
Sub-aspects of individual perceptions				
- Perceived risk of breast cancer	4 -20	4 -20	12.95	3.13
- Perceived severity of breast cancer	6-30	6-30	20.99	4.67
- Perceived benefits of BCSP	4 -20	4-20	15.38	2.43
- Perceived barriers of BCSP	9-45	9-45	22.18	6.37

Table 9. The researcher classified individual perceptions and sub-aspects of individual perceptions into 3 levels by using \bar{X} and S.D. (For the score of each item, please see Appendix F) to identify associations between individual perceptions and BCSP further. The results showed that most healthy women had a moderate level of individual perceptions (76.7%), including perceived risk (62.3%), perceived severity (68.7%), perceived benefits of BCSP (59.3%), and perceived barriers to BCSP (71.3%).

Table 9 Level of women's individual perceptions; perceived risk and severity of breast cancer, perceived benefits and barriers to BCSP (BSE/mammography)

Variables	Low n (%)	Moderate n (%)	High n (%)
Individual perceptions	32(10.7)	230(76.7)	38(12.7)
Sub-aspects of individual perception			
- Perceived risk of breast cancer	43(14.3)	187(62.3)	70(32.3)
- Perceived severity of breast cancer	50(16.7)	206(68.7)	44(14.7)
- Perceived benefits of BCSP	42(14.0)	178(59.3)	80(26.7)
- Perceived barriers to BCSP	33(11.0)	214(71.3)	53(17.7)

Part 5 Factors Associated with BCSP in Healthy Women

Selected factors were used to identify some associations with BCSP in healthy women. Regarding to BCSP in this study, BSE and intention to do a mammography were used. These were as follows:

5.1 The relationship between selected factors and BSE performance

The results showed that age, religion, income, knowledge, physician's recommendation to do BSE, information resources, family encouragement, and social encouragement were statistically significantly associated with BSE (Table 10).

By using Cramer's V to identify the level of those associations, it was revealed that age, religion, income and knowledge were associated with BSE at a low level ($V = .16, .16, .25$ and $.23$ respectively). Physician's recommendation to do BSE, receiving information resources, family encouragement, and social encouragement were associated with BSE at a moderate level ($V = .34, .35, .38,$ and $.53$ respectively).

The findings also showed that educational level, socioeconomic status, having a family history of cancer or breast cancer, and individual perceptions of BCSP were not significantly associated with BSE performance (Table 10).

Table 10 The relationship between selected factors and performance of BSE

Factors	BSE		χ^2 -value (Pvalue)	Cramer's V (V.)
	Performed n (%)	Not Performed n (%)		
1. Age				
20-39 years.	97(32.3)	92(30.7)	7.544(.006)**	.16
40-60 years.	75(25.0)	36(12.0)		
2. Religion				
Buddhist	150(50.0)	56(32.0)	7.412(.006)**	.16
Muslim	22(7.3)	32(10.7)		
3. Educational level				
No schooling or Primary school	92(30.7)	75(25.0)	.775(.379)	.05
High school or higher level	80(26.7)	53(17.7)		
4. Income				
Less than 5,000 baht	109(36.3)	110(36.7)	19.395(.000)**	.25
5,000-10,000 baht	51(17.0)	16(5.3)		
More than 10,000 baht	12(4.0)	2(.7)		
5. Knowledge				
Low	21(7.0)	32(10.7)	15.630(.000)**	.23
Moderate	100(33.3)	79(26.3)		
High	51(17.0)	17(5.7)		
6. Physician's recommendation to do BSE				
Yes	93(31.0)	26(8.7)	34.944(.000)**	.34
No	79(26.3)	102(34.0)		
7. Family history of cancer or breast cancer				
Yes	16(5.3)	8(2.7)	.929(.335)	.06
No	156(52.0)	120(40.0)		
8. Receiving information resources				
Yes	156(52.0)	79(26.3)	36.311(.000)**	.35
No	16(5.3)	49(16.3)		
9. Family encouragement				
Yes	82(27.3)	15(5.0)	43.364(.000)**	.38
No	90(30.0)	113(37.7)		
10. Social encouragement				
Yes	102(34.0)	10(3.3)	83.162(.000)**	.53
No	70(23.3)	118(39.3)		
11. Individual perceptions				
Low	20(6.7)	12(4.0)	.392(.822)	.04
Moderate	126(42.0)	96(32.0)		
High	26(8.7)	20(6.7)		

** p < .01

Considering sub-aspects of individual perceptions, it was found that perceived severity and perceived benefits were significantly associated with BSE practice at the level of .05 and .01 respectively, and the association of perceived severity, perceived benefits and BSE were low level (Table 11).

Table 11 The relationship between sub-aspects of individual perceptions and performance of BSE

Factors	BSE		χ^2 -value (Pvalue)	Cramer's V (V.)
	Performed n (%)	Not Performed n (%)		
Individual perceptions				
-Perceived risk of breast cancer				
Low	23(7.7)	20(6.7)	.464(.793)	.04
Moderate	107(35.7)	80(42.8)		
High	42(14.0)	28(40.0)		
-Perceived severity of breast cancer				
Low	17(5.7)	11(3.7)	6.090(.048)*	.14
Moderate	133(44.3)	111(37.0)		
High	22(7.3)	6(2.0)		
-Perceived benefits of BSE				
Low	15(5.0)	27(9.0)	9.729(.008)**	.18
Moderate	106(35.3)	72(24.0)		
High	51(17.0)	29(9.7)		
-Perceived barriers of BSE				
Low	24(8.0)	9(3.0)	5.437(.066)	.14
Moderate	123(41.0)	91(30.3)		
High	25(8.3)	28(9.3)		

** p < .01, *p < .05

5.2 The relationship between selected factors and frequency of BSE

Table 12 shows factors associated with frequency of BSE from women who performed BSE. Age, religion, income, knowledge, physician's recommendation to do BSE, receiving information resources, family encouragement, and social encouragement were statistically significantly associated with frequency of BSE practice at a level of .01, except for religion, which was significantly associated with frequency of BSE at .05. In terms of level of association, it was found that age, religion, income, and knowledge had low association ($V = .19, .16, .18$ and $.19$ respectively) with frequency of BSE practice. Physician's recommendation to do BSE, receiving information resources, family encouragement, and social encouragement had a moderate level of association with frequency of BSE practice ($V = .34, .35, .38,$ and $.53$ respectively).

Educational level, socioeconomic status, having family history of cancer or breast cancer, and individual perceptions were not significantly associated with frequency of BSE performance (Table 12).

Table 12 The relationship between selected factors and frequency of BSE

Factors	Frequency of BSE		χ^2 -value (pvalue)	Cramer's V (V.)
	1 time/month n (%)	2 months/time n (%)		
1. Age				
20-39 years.	63(21.0)	34(11.3)	11.299(.004)**	.19
40-60 years.	38(12.7)	37(12.3)		
2. Religion			8.010 (.018)*	.16
Buddhist	90(52.3)	60(34.9)		
Muslim	11(6.4)	11(6.4)		
3. Educational level			4.301(.116)	.12
No schooling or Primary school	48(16.0)	44(14.7)		
High school or higher level	53(17.7)	27(9.0)		
4. Income			19.548(.001)**	.18
Less than 5,000 baht	63(36.7)	46(26.7)		
5,000-10,000 baht	31(18.0)	20(11.6)		
More than 10,000 baht	7(4.1)	5(2.9)		
5. Knowledge			20.554(.000)**	.19
Low	13(4.3)	8(2.7)		
Moderate	64(21.3)	36(12.0)		
High	24(8.0)	27(9.0)		
6. Physician's recommendation to do BSE			34.981(.000)**	.34
Yes	54(18.0)	39(13.0)		
No	47(15.7)	32(10.7)		
7. Family history of cancer or breast cancer			.980(.613)	.06
Yes	9(3.0)	7(2.3)		
No	92(30.7)	64(21.3)		
8. Receiving information resources			36.333(.000)**	.35
Yes	92(30.7)	64(21.3)		
No	9(3.0)	7(2.3)		
9. Family encouragement			43.509(.000)**	.38
Yes	47(15.7)	35(11.7)		
No	54(18.0)	36(12.0)		
10. Social encouragement			83.531(.000)**	.53
Yes	58(19.3)	44(14.7)		
No	43(14.3)	27(9.0)		
11. Individual perceptions			4.445(.349)	.09
Low	15(5.0)	5(1.7)		
Moderate	74(24.7)	52(17.3)		
High	12(4.0)	14(4.7)		

** p < .01 , * p < .05

Considering sub-aspects of individual perceptions and frequency of BSE practice, it was found that perceived severity and perceived benefits were significantly associated with frequency of BSE practice at the level of .05, and the association of perceived severity, perceived benefits and frequency of BSE practice were in a low level (Table 13).

Table 13 The relationship between sub-aspects of individual perceptions and frequency of BSE

Factors	Frequency of BSE		χ^2 -value (Pvalue)	Cramer's V (V.)
	1 time/month n (%)	2 months/time n (%)		
Individual perceptions				
-Perceived risk of breast cancer				
Low	13(4.3)	10(3.3)	5.268(.261)	.09
Moderate	69(23.0)	38(12.7)		
High	19(6.3)	23(7.7)		
-Perceived severity of breast cancer				
Low	10(3.3)	7(2.3)	10.485(.033)*	.13
Moderate	82(27.3)	51(17.0)		
High	9(3.0)	13(4.3)		
-Perceived benefits of BSE				
Low	11(3.7)	4(1.3)	12.502(.014)*	.14
Moderate	57(19.0)	49(16.3)		
High	33(11.0)	18(6.0)		
-Perceived barriers of BSE				
Low	15(5.0)	9(3.0)	6.019(.198)	.10
Moderate	70(23.3)	53(17.7)		
High	16(5.3)	9(3.0)		

*p< .05

5.3 The relationship between selected factors and regular BSE

Regarding factors associated with regular BSE among women who performed BSE, it was found that age, religion, income, knowledge, physician's recommendation to do BSE, receiving information resources, family encouragement, and social encouragement were significantly associated with regular BSE practice at a level of .01, except for religion which was significantly associated with regular BSE practice at a level of .05. By using Cramer's V, it was found that age, religion, income and knowledge had a low association ($V = .18, .16, .18$ and $.18$ respectively) with regular BSE practice. Physician's recommendation to do BSE, receiving information resources, and family encouragement were associated with regular BSE at a moderate level ($V = .35, .35$ and $.46$). Only social encouragement was a significant factor, which had a strong association with regular BSE practice ($V = .56$)

The findings also showed that educational level, socioeconomic status, having family history with cancer or breast cancer, and individual perceptions were not significantly associated with regular BSE performance (Table 14).

Table 14 The relationship between selected factors and regular BSE

Factors	Regular BSE		χ^2 -value (pvalue)	Cramer's V (V.)
	Yes n (%)	No n (%)		
1. Age				
20-39 years.	37(12.3)	60(20.0)	9.318(.009)**	.18
40-60 years.	36(12.0)	39(13.0)		
2. Religion				
Buddhist	63(36.6)	87(50.6)	7.482(.024)*	.16
Muslim	10(5.8)	12(7.0)		
3. Educational level				
No schooling or Primary school	41(13.7)	52(17.3)	.642(.725)	.05
High school or higher level	32(10.7)	47(15.7)		
4. Income				
Less than 5,000 baht	45(26.2)	64(37.2)	19.647(.001)**	.18
5,000-10,000 baht	51(17.0)	16(5.3)		
More than 10,000 baht	5(2.9)	7 (4.1)		
5. Knowledge				
Low	5(1.7)	16(5.3)	18.886(.001)**	.18
Moderate	43(14.3)	57(19.0)		
High	25(8.3)	26(8.7)		
6. Physician's recommendation to do BSE				
Yes	44(14.7)	49(16.3)	36.984(.000)**	.35
No	29(9.7)	50(16.7)		
7. Family history of cancer or breast cancer				
Yes	6(2.0)	10(3.0)	1.131(.568)	.06
No	67(22.3)	89(29.7)		
8. Receiving information resources				
Yes	67(22.3)	89(29.7)	36.399(.000)**	.35
No	6(2.0)	10(3.3)		
9. Family encouragement				
Yes	47(15.7)	36(12.0)	61.791(.000)**	.46
No	26(8.7)	63(21.0)		
10. Social encouragement				
Yes	53(17.7)	49(16.3)	92.752(.000)**	.56
No	20(6.7)	50(16.7)		
11. Individual perceptions				
Low	7(2.3)	13(4.3)	1.928(.749)	.06
Moderate	57(19.0)	69(23.0)		
High	9(3.0)	17(5.7)		

** p < .01, * p < .05

Considering sub-aspects of individual perceptions and regular BSE practice, it was found that perceived severity and perceived benefits were significantly associated with regular BSE practice at a level of .05 and for the association of perceived severity, perceived benefits and regular BSE practice were in a low level (Table 15).

Table 15 The relationship between sub-aspects of individual perceptions and regular BSE

Factors	Regular BSE		χ^2 -value (Pvalue)	Cramer's V (V.)
	Yes n (%)	No n (%)		
Individual perceptions				
-Perceived risk of breast cancer				
Low	7(2.3)	15(5.0)	2.319(.677)	.06
Moderate	48(16.0)	59(19.7)		
High	18(6.0)	25(8.3)		
-Perceived severity of breast cancer				
Low	6(2.0)	11(3.7)	9.913(.042)*	.13
Moderate	61(20.3)	72(24.0)		
High	6(2.0)	16(5.3)		
-Perceived benefits of BSE				
Low	5(1.7)	10(3.3)	11.209(.024)*	.14
Moderate	43(14.3)	63(21.0)		
High	25(8.3)	26(8.7)		
-Perceived barriers of BSE				
Low	8(2.7)	16(5.3)	8.067(.089)	.12
Moderate	123(41.0)	91(30.3)		
High	14(4.7)	11(3.7)		

* p < .05

5.4 The relationship between selected factors and intention to have a mammography.

The results showed that factors associated with intention to have a mammography were age, income, knowledge, physician's recommendation to do BSE, receiving information resources, family encouragement, and social encouragement with significant association at a level of .01, except for age and income which were significantly associated at level of .05. Age, income, and physician's recommendation to do BSE were associated with intention to have a mammography at a low level ($V = .14, .17$ and $.23$) while knowledge and receiving information resources were associated with intention to have a mammography at a moderate level ($V = .29$ and $.27$). Only two factors were strongly and very strongly associated with intention to do mammography, family support and social support ($V = .78$ and $.75$ respectively).

The findings also showed that religion, educational level, socioeconomic status, having family history of cancer or breast cancer, and individual perceptions were not significantly associated with intention to have a mammography (Table 16).

Table 16 The relationships between selected factors and intention to have a mammography

Factors	Intention to have a mammography		χ^2 -value (pvalue)	Cramer's V (V.)
	Yes n (%)	No n (%)		
1. Age				
20-39 years.	61(20.3)	128(42.7)	5.586 (.018)*	.14
40-60 years.	51(17.0)	60(20.0)		
2. Religion				
Buddhist	58(19.3)	188(62.7)	1.475(.224)	.07
Muslim	17(5.7)	37(12.3)		
3. Educational level				
No schooling or Primary school	62(20.7)	105(35.0)	.007(.934)	.01
High school or higher level	50(16.7)	83(27.7)		
4. Income				
Less than 5,000 baht	71(23.7)	148(49.3)	8.677(.013)*	.17
5,000-10,000 baht	33(11.0)	34(11.3)		
More than 10,000 baht	8(2.7)	6(2.0)		
5. Knowledge				
Low	7(2.3)	46(15.3)	24.851(.000)**	.29
Moderate	66(22.0)	113(37.7)		
High	39(13.0)	29(9.7)		
6. Physician's recommendation to have a mammography				
Yes	61(20.3)	58(19.3)	16.352(.000)**	.23
No	51(17.0)	130(43.3)		
7. Family history of cancer or breast cancer				
Yes	9(3.0)	15(5.0)	.000(.986)	.00
No	103(34.3)	173(57.7)		
8. Receiving information resources				
Yes	104(34.7)	131(43.7)	22.213(.000)**	.27
No	8(2.7)	57(19.0)		
9. Family encouragement				
Yes	89(29.7)	8(2.7)	181.455(.000)**	.78
No	23(7.7)	180(60.0)		
10. Social encouragement				
Yes	94(31.3)	18(6.0)	165.856(.000)**	.75
No	18(6.0)	170(56.7)		
11. Individual perceptions				
Low	10(3.3)	22(7.3)	1.272(.529)	.07
Moderate	87(29.0)	135(45.0)		
High	15(5.0)	31(10.3)		

** p < .01, * p < .05

Considering sub-aspects of individual perceptions and intention to have a mammography in the current year, it was found that perceived barriers were significantly associated with intention to have a mammography at a level of .05. The association of perceived barriers and intention to have a mammography in the current year was at a low level (Table 17).

Table 17 The relationship between sub-aspects of individual perceptions and intention to have a mammography.

Factors	Intention to have a mammography		χ^2 -value (Pvalue)	Cramer's V (V.)
	Yes n (%)	No n (%)		
Individual perceptions				
-Perceived risk of breast cancer				
Low	10(3.3)	33(11.0)	4.256(.119)	.12
Moderate	74(24.7)	113(37.7)		
High	28(9.3)	42(14.0)		
-Perceived severity of breast cancer				
Low	11(3.7)	17(5.7)	3.656(.161)	.11
Moderate	86(28.7)	158(52.7)		
High	15(5.0)	13(4.3)		
-Perceived benefits of mammography				
Low	9(3.0)	33(11.0)	5.368(.068)	.13
Moderate	70(23.3)	108(36.0)		
High	33(11.0)	47(15.7)		
-Perceived barriers of mammography				
Low	18(6.0)	15(5.0)	7.918(.019)*	.16
Moderate	81(27.0)	133(44.3)		
High	13(4.3)	40(13.3)		

* p < .05

In summary, the results showed that some modifying factors and cues to action were mainly related to BCSP. Modifying factors were age, religion, income, knowledge about breast cancer and BSE, and cues to action were physician's recommendation, receiving information resources, family encouragement, and social encouragement. Some aspects of individual perceptions, namely perceived severity, perceived benefits, and perceived barriers, were associated with BCSP in healthy women in this study.

Discussion

The study about factors associated with breast cancer screening practices (BCSP) in healthy women is presented and discussed below:

1. Women's Characteristics

The age range of the healthy women was from 20 to 60 with a mean age of 35.49 years. The majority of the women were aged between 20-30 years, similar to the population of women in Songkhla province, which had a mean age of 36.73 years (Civil Registration Section from Songkhla Municipality and Songkhla district, 2002). Most of the women (82%) were Buddhist; similar to the population in Songkhla where the religion is mainly Buddhism (64%). Both Buddhist and Muslim women mainly completed only formal primary education, because primary education was the lowest level of education that the Thai government supported for children in the past (Ministry of Interior in Brief, 2001). This is similar to Lundberg and Trichorb (2001) who studied 179 Thai Buddhist patients in Bangkok Hospital. It was found that 49.9% of the women had primary school-level education or less. Twenty-nine percent were unemployed/housewives/students. More than half of the subjects had personal income less than 5,000 baht per month; the remainder had personal income ranging from 5,000 to 25,000 baht. Most of them responded that their income was adequate, except Muslim women responded that their income was adequate and inadequate in the same proportion.

The majority of the women had neither a history of breast problems nor a family history of cancer or breast cancer. Most women were married, which was similar to a

previous study by Kengkhetkit, Rabieb and Aemruksa in 1999. In this study, women mainly received breast cancer information from mass media. However, a professional health care team was an important resource of information, especially physicians and nurses. In terms of receiving information, most of the subjects had receiving information about breast self-examination (BSE). In contrast, the information about mammography was the lowest. As shown in the results, all women knew more about BSE but less about mammography. This may be because BSE is costless and it is convenient for Thai women to check their breasts by themselves. Furthermore, mammography was related to socioeconomic status; it is too expensive for most women to access. This was also not recommended by the American Cancer Society (ACS) for all women. It is therefore unnecessary for a professional health care team to suggest that all women check their breasts by mammography except for high-risk groups or women who found abnormal signs in their breasts. In this study, only 17.4% of the women had found abnormal signs in their breast by BSE. In addition, the majority of women in this study were aged 20-30 years, for which the ACS and physicians did not recommend doing mammography routinely (Champion, 1995). Interestingly, the results showed that none of the Muslim women aged 40 years old had had a mammography. This may be because there was only a small sample size of Muslim women aged 40 years old in this study or only 1.8% of Muslim women had ever heard about mammography.

2. Knowledge and Individual Perceptions about Breast Cancer and BCSP

More than half the women had knowledge about breast cancer at a moderate level. In comparison, Kengkhetkit, Rabieb and Aemruksa (1999), who studied factors influencing the practice of breast self-examination in 300 Thai women, found that 100 outpatients in a breast unit and 100 outpatients in a general unit in Siriraj Hospital had slightly inadequate knowledge of breast cancer and BSE. Also, Nemcek (1989) who studied 95 black women aged 25-60 years old found that the women's level of knowledge had been low. The finding is also supported by another study, which found that women in South Asia had little knowledge of breast cancer (Chaudhry, Srivastava, & Fitch, 1998). Champion (1985) found that younger women had greater knowledge than older women.

In terms of types of knowledge, it was shown that 54.7% of the women had a moderate level of general knowledge about breast cancer. However, knowledge about BSE was assessed to be low level compared to other types of knowledge, and knowledge about BSE practice was found to be the most deficient among these women. Considering knowledge of BSE, most women didn't know when it is appropriate to perform BSE or the method to use. Hence, health education about breast cancer should be emphasized concerning these points to all women.

Regarding individual perceptions, most women perceived their risk, severity of breast cancer and barriers of BSE at a moderate level. This may be because most healthy women never received information about breast cancer and breast cancer risk, and also the causes of this disease are unknown, so women in this study perceived that they had a

chance to get breast cancer at a moderate level. The results showed that the majority of women perceived the severity of breast cancer at a moderate level. This may be because even though breast cancer is a severe disease, breast cancer patients can do their daily duty and living as usual unless in the late stages, therefore it seems that breast cancer is not so severe. Most women perceived that BSE is a useful method to detect abnormal signs in their breasts, but most of them had never received information about BSE, so most women perceived the benefits of BSE at a moderate level. Furthermore, most healthy women perceived barriers to performing BSE at a moderate level, which may be because BSE is a simple method, at no cost, but most of them had knowledge about BSE practice in a low level. This was a recent study showed that 62% of women who had one or more primary (first degree) relatives with breast cancer were assessed as “low risk”, 28% were at “medium risk”, 10% were considered to be “high” or genetically at risk for breast cancer and none of the women were considered certain to get breast cancer (Chalmers et al., 2001). Women generally believe they are at low risk for breast cancer (Howe, 1981) but women with a positive family history of breast cancer perceived themselves as significantly more susceptible to developing breast cancer than women with no family history of the disease (Finney & Iannotti, 2001). However, women tended to perceive themselves as at risk when they perceived the severity of breast cancer. According to the study by Jirojwong and Manderson (2001), it was found that most women (97%) perceived that breast cancer is severe because it can cause suffering, pain, anxiety, and unhappiness. They also reported that 94.5% of women perceived BSE as useful in detecting breast cancer and

91.7% of them considered BSE helped breast cancer to be treated if detected at the early stages of the disease.

In general, women in this study had individual perceptions at a moderate level, compared to another study of Thai women which found that women who came to use the services in a general unit and a breast unit had individual perceptions at a low level (Kengkhetkit , Rabieb & Aemruksa, 1999). This may be because most of the women (78.3%) in this study received more information about breast cancer.

3. Breast Cancer Screening Practices (BCSP) and Related Factors

Regarding breast cancer screening practices (BCSP), more than half of the women (59%) who performed BSE reported that they did so at least once a month. However, less than half of them (42%) performed BSE regularly. This is similar to other studies, but the incidence rate of BCSP is higher. For example, the rate of patients from a general unit and a breast unit in Siriraj Hospital who performed BSE at least once a month was about 36% (Kengkhetkit, Rabieb & Aemruksa, 1999). Also, Chaiphibalsarisdi, and Salyer (2000) studied 18 Thai janitors women aged 23-54 years at Chulalongkorn University, and found that only 33% of them performed BSE monthly and regularly. In addition, in a study by Jirojwong and Manderson (2001), who studied 145 first generation Thai immigrant women age 20 years or older, it was found that 25% of 138 women had palpated their breasts once a month for the previous two years. This may be because women can get information from various resources as much as they want such as TV, video, VCD, leaflet, newspaper, magazine, poster and radio. However, the number of

those who regularly perform BSE is still slightly low; this may be because of less awareness of continuity of BSE practice, especially concerning the recommended frequency and time for BSE practice. The lack of awareness may account for their less than monthly practice (see Table 8 and Appendix E). More than half of Muslim women (59.3%) never perform BSE and half of them did not perform BSE monthly and mostly perform irregularly (54.5%).

In terms of BCSP, mammography has been negligible. Most women in this sample had never heard about mammography and most of them had never had a mammography. Most of Muslim women had never heard of mammography and none had had a mammography before. Studies in another country found that 39% of women reported having had a mammography (Chalmers et al., 2001). This may be because women in this study had received less information. Moreover, mammography is not recommended for all women. Another reason could be that most of them have neither a history of breast problems nor breast cancer in the family. In addition, most women have never had a physician's recommendation and two-thirds of them have never had family or social encouragement to have a mammograph. Many women also gave two important reasons relating to socioeconomic factors: 'I did not have enough money to be checked by mammography and I am afraid that this method can cause pain in my breast'. Hence, only 1.7% of all women had been checked by mammography, and only one Muslim woman. However, one-third of the women intended to do mammography in the coming year, especially women aged 40-60 years old.

Physician consultation was sought when women found abnormal signs in their breast, especially Muslim women. This is similar to Remennick (1999), who found that

most women (80%) would immediately consult their physician if they found abnormal signs in their breasts.

Regarding factors associated with breast cancer screening practices in healthy women, the results showed that women's ages related to BSE, frequency and regularity to perform BSE, and intention to have a mammography was at a low level. Women at younger ages (20-39 years old) gained more BSE practice than older women (40-60 years old). It is partly because the younger women have higher education level and have more knowledge about breast cancer and BSE than older women. This is similar to Remennick (1999), who studied 620 Russian Immigrant women in Israel, and reported that the younger were more aware of breast cancer than of other female cancers. In contrast, Nemcek (1989), who studied 95 Black women age 25-60 years old, reported that older women more frequently performed BSE than younger women. Previous studies also found that women who practice BSE more often than monthly are more likely to be older, compared to younger women, who practice BSE less frequently (Howe, 1981). Another study found that older women with a history of breast lumps were more likely to perform BSE (Takakuwa et al., 2000). Both young and old women have equally had the risk of breast cancer when they discovered breast lumps.

Religion was associated with BSE, frequency and regularly of BSE practice at a low level. This is similar to Rajaram and Rashidi (1999), who stated that religious practice was related health promotion and disease prevention. Jirojwong and Manderson (2001) also found that cultural and traditional beliefs could influence breast cancer screening. It may be because religion were related traditional beliefs, and hence related BCSP in this study.

This study found that more Thai Buddhist women performed BSE than Thai Muslim women. The results also revealed that among women age 40 years old, Thai Buddhist women intended to have and have a mammography more than Thai Muslim women. The reason may be partly due to their religion. To promote BCSP in healthy women in Songkhla Hospital, health care team must consider religion including beliefs, cultural and traditional practices that may be different in each religion, to provide culturally appropriate intervention.

Income was associated with BSE, frequency and regularity of BSE practice, and intention to have mammography at a low level. This is similar to Krischer, Cook, and Weiner (1998), who found that BCSP was correlated with income. A predictor of mammography use was associated with higher income (Bostick et al., 1994). Income is a significant factor related to mammography and it is a significant predictor of ever having had a clinical breast examination (Nichol, Misra, & Alexy, 1996). In addition, Takakuwa et al. (2000) found that women with lower income and without private insurance were less likely to practice preventive measures such as BSE and mammography. This may be because income was related to educational level and knowledge, and women who have a high education level and knowledge usually have more awareness of their health. Also, some methods to detect breast cancer in the early stages require money, such as mammography. Some women said, "I am healthy, no need to pay money for check-up to find the disease"

Knowledge about breast cancer and BSE was correlated with BSE, frequency and regularity of BSE practice, and intention to have a mammography at a low level. This is similar to Howe (1981), Remennick (1999) and Chatchaisucha and Pongthawornkamol

(2001), who found that there were positive associations between knowledge and BSE frequency. It means that the greater the knowledge of BSE, the higher the practice of BSE. However, the low association between knowledge and BCSP found in this study is partly because of the educational level of the women in this study. Most of the women had finished only primary school or lower. In addition, there is a relationship between knowledge and educational level. Lack of knowledge about cancer has been associated with less education (Phipps, Cohen, Sorn, & Braitman, 1999). Furthermore, a common predictor of breast cancer screening behavior is knowledge (Rutledge et al., 2001), and knowledge is related to the behavior of BSE practice (Kengkhetkit, Rabieb, & Aemruksa, 1999). Knowledge can therefore enhance breast cancer screening practices and early detection (Ford et al., 1997). Moreover, Chatchaisucha and Pongthawornkamol (2001) found that knowledge of breast cancer and BSE was significantly correlated with the frequency of practice of BSE ($r = 0.24, p < .01$) or proficiency of BSE (Champion & Menon, 1997). Also, Jirojwong and Manderson (2001) found that women's knowledge of their family history of breast cancer might also encourage women to conduct BSE, because knowledge was related to BCSP and related to BSE practice (Kengkhetkit, Rabieb & Aemruksa, 1999). Therefore, increased knowledge about breast cancer and BSE, especially knowledge of BSE for women in this group, is important, and the professional health care team in Songkhla Hospital should pay attention.

Physician's recommendations were correlated with BSE, frequency and regularity of BSE, and intention to have a mammography at a low to moderate level. Physician's advice is one of the key determinants of screening behaviors (Champion & Miller, 1996 cited in Remennick, 1999). Women who have a regular physician are predicted to have a

higher frequency or proficiency of BSE (Champion & Menon, 1997). Unfortunately, this study found that 60.3% of healthy women did not receive a physician's recommendation to do BSE. Only 8.1% of Thai Buddhist and 1.8% of Thai Muslim women aged 40 years or over had received advice from a physician to have a mammography. This may be because all of the subjects were healthy, and had no motivation to see a physician. Therefore, the physician did not have an opportunity to give advice to them to perform BSE or have a mammography.

This study also found that the mammography was significantly correlated with a physician's recommendation. It was shown that 37% of women intended to have a mammography but only 1.7% of them have ever had one. It is very low because most women did not have a mammogram unless the physician advised them to do so. The reason is as mentioned before; mammography is too expensive for most women. Most of them intended to use the alternative way to check their breasts by BSE because it is costless, non-invasive, simple (Friedman, Nelson, Webb, Hoffman, & Baer, 1994; Mahon, 1995), more comfortable, saves time and they are not exposed to other persons. In addition, Thai patients, of both genders, feel safe and have reduced anxiety and fear when they meet their doctor, from whom they believe that they gain helpful treatment and advice. Thus, women more commonly chose to visit the doctor than to talk with a nurse (Lundberg & Trichorb, 2001). Another reason may be that most women perceived barriers to have a mammography, which was found to be one of the significant factors related to the moderate level of mammography. Therefore, most of the women did not intend to or did not have a mammography.

The experience of having a mammography in women was also predicted by decreased barriers to having a mammography, similar to Rutledge et al. (2001), who found that BSE behavior was predicted by decreased barriers to do BSE. In the researcher's observation and experience, women did not visit a physician or nurse except when they got sick. To promote or advise them about BCSP is not easy, even though the physician and nurse also give health education for healthy women when they come for a yearly check-up. Otherwise, there are media such as TV. and video, for 'alternative information sources for women who have less access to services.

Receiving information resources were correlated with BSE, frequency and regularity of BSE practice, and intention to be checked by mammography at a moderate level. Information resources are one of the important sources for women to receive knowledge and information that can encourage them to have BCSP. Moreover, those information sources (video, leaflets, and teaching demonstrations) could increase by approximately 30% women's knowledge of breast cancer and BSE as well as their ability to detect lumps (Ortega, Lopez, & Lopez, 2000). In addition, receiving information could influence women's performance of BSE. Most of the women in this study (57%) had performed BSE, partly because they received much information from media and health care professionals (Kengkhetkit, Rabieb, & Aemruksa, 1999). This is similar to another study, which found that women aged 40-60 years in Bangkok received information about breast cancer mainly from TV (33%), and 26% from health care teams, and received information about BSE mainly from the health care team (23%), and 21% from TV (Narkrit, 1998). This may be because health education is a part of the health care professional's role and they are the resource persons for health problems as stated by the

women that "If I got health problems I usually come to see the doctor, and for cure and care I think it depends on the doctor and nurse". In general, people in Thai culture have respect, and are confident and believe in physicians and nurses because they think that health care teams are the leaders of health care. In addition, women's preferences and their interests are important because they can lead to more information and knowledge (Leawwarin, 1991 cited in Sangkhao, 2001).

To promote BCSP, an information source is one of the effective ways. Furthermore, gaining information can improve knowledge, update information, change attitudes, and provide skills to the receivers to perform BSE (Kengkhetkit, Rabieb, & Aemruksa, 1999). Nevertheless, women who performed BSE had received more information about breast cancer and BSE than women who had not performed BSE. This was supported by a study, which found that receiving information directly influenced frequency of BSE. Professional health care teams should be encouraging BSE behavior by giving information periodically (Kengkhetkit, Rabieb, & Aemruksa, 1999). Hence, to promote BCSP for women in this group, information resources such as media and professional health care teams should be considered for effective results.

Family encouragement was correlated with BSE, frequency to do BSE, regularity to do BSE and intention to check by mammography at a moderate to very strong level. This may be because of Thai culture, which concentrates on family relationships. A significant person in the family can influence family members to do or not to do some behaviors (Khwankaew, 1997). In Thai culture, the family has a central role when a serious problem affects one of its members (Lundberg & Trichorb, 2001). In addition, Thai women usually follow their husband and respect him as a leader (Khwankaew, 1997).

Suggestions from other family members, especially the husband, can influence women to have BSE because the person who has the most power to make decisions in the family is the husband and he usually makes decisions on many things in the family (Sangkhaio, 2001). In general, persons want someone close to them to help, support or to consult with. For example, in the family, the spouse is the encouraging person and the most effectively supportive person for the women because the relationship between the spouses is very close; they understand each other very well and usually help each other (Puupaiboon, 1994). Some studies have showed that married women were more likely to have had a mammogram and show more positive BSE behavior than women belonging to other marital status groups (Nichols, Misra, & Alexy, 1996). Similar to this study, which showed that married women are the major group, which performs BSE (59.9%). This may be part of women's support from their husband. Consequently, to be effective in promoting BCSP in healthy women, family members such as a husband should be included.

Social encouragement was correlated with BSE, frequency and regularity of BSE and intention to have a mammography at a moderate to high level. This is also supported by another study, which found that relatives or friends who had cancer were the cue to take cervical and breast cancer screening (Jirojwong & Manderson, 2001). Nevertheless, women who knew someone with cancer scored significantly higher on BSE (Nichols, Misra, & Alexy, 1996). Another study showed that 65% of respondents who had close relatives, friends, or colleagues with cancer rated their own risk as moderate or high, compared to 37% among respondents without such relatives, friends, or colleagues (Remennick, 1999). Most women who perform BSE usually receive more information

about BSE from their friends and their relatives than women who do not perform BSE (Bareford, 1994), particularly when they receive information from survivors of breast cancer, which can encourage women to perform BSE (Erwin, Spayz, Stotts, Hollenberg, & Deloney, 1996). However, Wagle et al. (1997) found that social encouragement was significantly related to the frequency of BSE ($r=0.45$, $p<0.05$).

In this study social encouragement was associated with BSE at a moderate to high level. This may be because the Thai society network and a natural expression of Thai identity in terms of social relationships are important and very strong (Lundberge & Trichorb, 2001). Family and friends groups usually ask, exchange or transfer information, knowledge and ideas with each other. Furthermore, there are many groups of women, such as housewives groups, and volunteer women's groups, that give woman chances to do many activities and work together. The better understanding there is in the group, the higher the influence from the group to encourage women to do BSE and mammography.

Considering sub-aspects of individual perceptions, it was found that perceived risk is not associated with BCSP, which is similar to other studies (Howe, 1981; Chatchaisucha & Pongthawornkamol, 2001). This is partly because even though women perceived a risk of getting breast cancer, this disease does not show any signs or symptoms in the early stages, so it seem that breast cancer is not severe enough to be concerned about, hence, they do not hasten to have BCSP. A previous study also indicated that women thought their chance of getting breast cancer would be due to their previous history of having abnormal signs such as benign tumor, breast cyst, or having a family member with breast cancer (Jirojwong & Manderson, 2001). However, the

perceived severity and perceived benefits were associated with BSE, frequency and regularity of performing BSE, which may be because women who perceived the severity of breast cancer also perceived that BSE was useful for them to detect breast cancer. Therefore, they practiced BSE. Another study (Chatchaisucha & Pongthawornkamol, 2001) found that only perceived benefits are positively correlated with BSE ($r = .155$, $p < .01$) and perceived barriers are negatively correlated with BSE ($r = -.197$, $p < .01$). Most women's perceived barriers to BSE are accounted to be one factor influencing BSE performance and frequency or proficiency of BSE (Champion & Menon, 1997; Kengkhetkit, Rabieb, & Aemruksa, 1999). This was negatively correlated with BSE performance (Chatchaisucha & Pongthawornkamol, 2001). In addition, perceived barriers were associated with intention to have a mammography, which may be because to have a mammogram has many related factors that may be barriers, such as women's beliefs, fear or anxiety of this method, pain, and high cost of the mammography. Regarding this study, it was found that perceived barriers to having a mammography were correlated with the intention to have a mammography (Table 17). Results also showed that most women perceived barriers at a moderate level. The major barriers were lack of knowledge and cost of this method. Hence, most of them did not intend to be checked by a mammography.

In terms of BCSP, it was shown that there was no association with perceived risk. This is partly because most healthy women never received information about risk factors of breast cancer (Table 3) and perceived that they have a chance to get breast cancer at a moderate level (table 9).

In summary, the results of this study revealed that individual perceptions which were significantly associated with BCSP were healthy women who had perceived severity of breast cancer, perceived benefits of BSE, perceived barriers of mammography, and modifying factors which were significant associated with BCSP were age, religion, income, and knowledge. Cues to action that were significantly associated with BCSP were physician's recommendation, receiving information resources, family and social encouragement, while the others were not statistically associated with BCSP.