The Relationship Between Breast Self-Examination Efficacy and Breast Self-Examination Practice Among Staff Nurses, Bangladesh

Amina Khatun

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Thesis Title	The Relationship Between Breast Self-Examination Efficacy and Breast Self-Examination Practice Among Staff Nurses, Bangladesh.
Author	Mrs. Amina Khatun
Major Program	Nursing Science (International Program)

Major Advisor:

……
(Assist.Prof. Dr. Piyanuch Jittanoon)

Co-advisor:

……
(Assist. Prof. Dr. Umaporn Boonyasopun)

Examining Committee:

……Chairperson
(Assist. Prof. Dr. Wongchan Petpichetchian)

…….
(Assist. Prof. Dr. Piyanuch Jittanoon)

…….
(Assist. Prof. Dr. Umaporn Boonyasopun)

……....
(Dr. Hathairat Sangchan)

…….....
(Assist. Prof. Dr. Saifon Aekwarangkoon)

The Graduate School, Prince of Songkla University, has approved this thesis as partial fulfillment of the requirements for the Master of Nursing Science (International Program).

……..……..
(Assoc. Prof. Dr. Krerkchai Thongnoo)
Dean of Graduate School

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ABSTRACT

The purposes of this descriptive study were to determine the level of breast self-examination (BSE) efficacy, BSE practice, BSE proficiency of staff nurses at Rangpur Medical College Hospital, and to examine the relationship between nurses' BSE efficacy and BSE practice. The sample size was 100 nurses drawn from 273 total nurses at Rangpur Medical College Hospital. Data were collected by administering self-report questionnaire including subject's demographic characteristics, BSE efficacy questionnaire and BSE practice questionnaire. The data were analyzed using frequency, percentage, mean, standard deviation, chi-square, and Independent t-test.

The results revealed that very few amount of nurses practiced BSE (15%). A moderate level of BSE efficacy was found in overall BSE efficacy, BSE procedural efficacy, and BSE barriers management efficacy. Statistical mean difference was found in BSE efficacy and practice between BSE performed group and not performed group (M = 3.82, SD =0.31 and M = 3.38, SD =0.16, respectively). To promote BSE practice, nurses' BSE efficacy should be enhanced by providing continual BSE educational program and clinical facilities.

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ACS	…American Cancer Society
BSE	…Breast Self-Examination
RMCH	…Rangpur Medical College Hospital
CBE	…Clinical Breast Examination
HBM	…Health Belief Model

CHAPTER 1

INTRODUCTION

This chapter represents the background and significance of the problem, objective, theoretical framework, research hypothesis, and technical terms of this study.

Background and Significance of the Problem

Breast cancer is the most common cancer and the second leading cause of deaths due to cancer among the women worldwide. It has been estimated that one in every seven women will develop breast cancer sometime during her lifetime and the rate increases with age (American Cancer Society [ACS], 2008; Han, Baumann, & Cimprich, 1996). During 1998-2002, 95% of new cases and 97% of breast cancer deaths occurred among American women aged 40 and older. In 2005, an estimated 211,240 new cases of invasive breast cancer were diagnosed among the women and approximately 40,410 women were expected to die from breast cancer in the United States (ACS, 2005). In 2000, an estimated 189,000 breast cancer deaths occurred in developed countries and 184,000 deaths in developing countries, accounting for 16 and 12 percent of all cancer deaths in women, respectively (Kols, 2002). The increase in the incidences of breast cancer and cancer deaths in many countries makes it a matter of serious concern.

In Bangladesh, breast cancer also poses a serious health problem and leads to death as in case of other developing countries (Love, 2006). Limited data on

definite figures of breast cancer are available in Bangladesh; however it is estimated that around 1.2 million Bangladeshi women have been suffering from breast cancer and among them, 35,000 die every year (Staff correspondent, The Daily Star, Oct 25, as cited in Zabeen, 2005). It is reported in online news that 22,000 Bangladeshi women are attacked by breast cancer annually and 70% of them have died due to lack of treatment (Zinhua, 2008). Currently it is estimated that approximately 200,000 women are suffering from breast cancer and about 40, 000 new cases are developing annually in Bangladesh (Raup-Krieger, Roberto, Roberto, & Love**,** 2009). According to the 2005 annual report of the National Institute of Cancer Research and Hospital, Dhaka, top five cancers in female are cervix (24.6%), breast (24.3%), lungs (5.5%), oral cavity (4.1%) and ovary cancer (3.8%) (Iqbal, 2006). These data indicate that breast cancer is highly contentious fatal disease of women in Bangladesh.

Although breast cancer can not be prevented, early detection by screening measures will decrease the severity of the disease and increase survival rate (Gray, 1990; Lauver & Angerame, 1988). Breast self-examination (BSE), mammography, and clinical breast self-examination (CBE) are the methods of screening breast cancer as recommended by the American Cancer Society. The recommendation for early detection of breast cancer varies depending on a women's age. It is recommended that women aged 20-39 years should perform BSE monthly and CBE after every 3 years. For women age 40 and above, annual CBE and mammography along with monthly BSE are recommended (ACS, 2005). There are evidences showing that women who follow breast cancer screening recommendations are more likely to have their cancer detected and treated at an early stage, which can decrease their mortality by an

estimated 20-40% (Takakuwa, Ernst, Weiss, & Nick, 2000). In addition, 88% of women diagnosed with breast cancer in a localized stage survive at least 5 years after diagnosis (ACS).

Breast self-examination (BSE) is one of the effective screening measures and has been proven to be effective in discovery of lumps at an early stage (Champian, 1987; Chee, Rashidah, Shamsuddin, & Intan, 2003; Otto, 1997). It is a free, private, relatively simple examination and is a useful measure when mammography screening is not available, especially in the rural and poor inner urban areas (Sangchan, Tiansawad, Yimyam, & Wonghongkul, 2008). At present, BSE has been promoted among younger women and has been seen as a way of empowering women to take responsibility for their own health (ACS, 2007). However, previous literature indicated that even though 75-95% of women have heard about BSE, only 15 to 40% of them perform BSE on the regular basis (Anderson 2000; Research Corporation, as cited in Champion, 1987; 1988; 1992; Sangchan et., al). No data is available regarding BSE practice among Bangladeshi women.

Based on the literature review, there are a number of factors related to BSE practice among women. Self-efficacy, a judgment of one's ability to carry out a particular course of action, is one major influencing factor of BSE practice. Bandura (1997) reported that people who believe they are capable of performing a particular task are more likely to perform that task. It is evident from previous researches that perceived efficacy to perform BSE was consistently and positively related to the frequency of BSE practice and is one of the strongest predictive factors of performing BSE frequency (Anderson, 2000; Canbulata & Uzun, 2008; Lauver & Angerame,

1988; Manojovich, 2005; Sainitzer, 1990). The reasons for women to perform or not to perform BSE are essential to identify as well as their acquired information about the abilities to perform BSE successfully and how they can manage with the barriers that often accompany with this health practice. Frequency of BSE is significantly related to perceived confidence, perceived barriers, benefits, susceptibility, and knowledge (Agboola et al, 2009; Anderson, 2000; Champion, 1987; 1988; 1992; Sanitzer).

Consequently, the efficacy of breast self-examination behavior cannot be adequately evaluated until BSE proficiency is considered. Previous studies indicated that women's competence in the BSE technique, thoroughness and their ability to detect lump is necessary to perform BSE (Mamon & Zapka, 1985; Seif & Aziz, 2000). Studies also examined that women who correctly perform regular monthly BSE are more likely to find a breast lump in an early stage (Foxall et al., as cited in Canbulat & Uzan, 2008). A number of studies indicated that in the BSE process, very few women can cover each step thoroughly and correctly, also the value of BSE is often not comprehensively assessed proficiency. Despite this report, BSE proficiency should be measured for improving BSE confidence as well as BSE practice (Stefanek, Wilcox, & Marie, 1992).

The Bangladesh National Institute of Cancer Research and Hospital, (2005) stated that Bangladesh needs urgent attention on cancer control (including breast cancer) since the disease is expected to double in the next 20 to 25 years. The problem of breast cancer is particularly acute because of poverty, illiteracy, and other diseases associated with poor nutrition and lack of basic knowledge among people

about health matter. Due to the lack of awareness, breast cancer progresses in almost 42,000 Bangladeshi women every year (Salim, 2007). Increasing number of breast cancer among Bangladeshi women is due to stigma attached to breast lump, stigma due to shame, shyness, hesitation, and restricted Islamic Law in case of Muslim women especially in rural Bangladesh. Absence of BSE practice, absence of conception of self-breast examination, and lack of awareness about the risk of breast lump leads to the delay in health seeking behaviors (Zabeen, 2005). There is an absence of proper breast cancer control program in Bangladesh e.g. awareness building campaign of BSE, regular BSE by professionals, or any population-based cancer screening program. Bangladesh Cancer Society (BCS) has prepared a plan for overall cancer control including breast cancer in Bangladesh and formally handed it to the government for implementation. The plan includes 1) development of facilities for early diagnosis of breast cancers and treatment, 2) training programs for specialty and techniques of BSE, and 3) effort for early diagnosis through increased awareness by imparting knowledge of early signs and symptoms of breast cancer and by promoting breast self-examination (Iqbal, 2006).

Rangpur Medical College Hospital (RMCH) is only a tertiary level hospital among six districts of northern Bangladesh. Total population is 25, 34,365; male 50.92%, female 49.08% (Wikipedia, 2010). There are about 400 staff nurses who have been performing such important roles as care providers among this large number of population. They have a key role in advocating for women, whether in the political area or at patient's bed side. Nurses need to be knowledgeable about current trends in breast cancer management so that they can assist women throughout their treatment

process. Nurses also play a vital role in public education efforts directed towards breast cancer screening, which include teaching BSE, guiding for mammography and professional breast examinations, and portraying the hope of breast cancer cure with early detection (Han, et al., 1996). They also need to be prepared to teach and demonstrate breast self-examination instructions. To establish an education program which prepares nurses to teach breast-self examination, they have to identify their own BSE practice as well as their efficacy to perform such practice (Canbulata & Uzun, 2008; Salem, & Hassan, 2007; Takakuwa et al., 2000). Since this supportive role may be influenced by the nurse's own BSE practice, professional working experience, and personal lifestyle, therefore information about nurse's BSE practice is necessary (Canbulata & Uzun; Han et al.). Moreover, only a few researches have been conducted on BSE practice among Bangladeshi nurses.

During data collection (November, 2009), the researcher collected this data from RMCH, in Gynecological Out Patient Department (OPD), where there is a health education program established at RMCH in January 2007. Gynecological outdoor started with very few (3-4) trained nurses to teach their clients to perform BSE practice and Clinical Breast Examination (CBE) facilities with free of charge (only for suspected cases). The gynecologist then identified breast cancer positive cases and referred them to the surgical department for further treatment. After consulting with oncologists, surgical patients would receive necessary treatment. According to the annual record keeping, in 2007, the total breast cancer positive cases were 14, and in 2008, the number increased up to 68.

Despite the high prevalence rates of breast cancer and the consensus among researchers that BSE is an important health screening measure in early detection of breast cancer, a large percentage of women perform BSE by themselves either regularly or with proficiency. Instead, consistent findings of several studies highlighted the potential significance of an individual's self-confidence as a factor affecting BSE practice (Sainitzer, 1990). Two related constructs are important to BSE practice: the perceived competence in performing BSE and the perceived competency in dealing with the possibility of an abnormal finding, i.e., a health threat (Lauver; as cited in Sainitzer). The women who perceive fewer barriers when doing BSE and can also manage or overcome those barriers are more likely to perform BSE. BSE provides an effective alternative method of early detection of breast cancer, whereas other methods are impractical or have limited availability (i.e., mammography, clinical BSE). Self-efficacy is also a strong predictor in performing BSE. Moreover, no such kind of study has been conducted among the Bangladeshi women.

It is necessary to take an initial step to explore to what extent Bangladeshi nurses practice BSE and the level of their perceived self-competence in BSE. Without such knowledge, it is not possible to expect them to provide any teaching efforts to their clients. The findings of this study will be useful to further identify methods to increase their BSE efficacy and BSE practice, which in turn, will promote their awareness and willingness to educate their female clients.

Objectives

1. To determine the level of BSE efficacy among staff nurses

2. To determine the BSE practice among staff nurses

3. To determine the proficiency of BSE practice among staff nurses

4. To examine the relationship between BSE efficacy and BSE practice among staff nurses.

*Research Question*s

1. What is the level of BSE efficacy among staff nurses?

2. What is the practice of BSE among staff nurses?

3. What is the BSE proficiency among staff nurses?

4. Is there a relationship between BSE efficacy and BSE practice among staff nurses?

Theoretical Framework of the study

The theoretical framework of this study was based on the Social Cognitive Theory (SCT). The SCT presents an interactional model of causation in which environment events, personal factors, and behavior act as reciprocal determinants of each other. This theory puts major emphasis on self-direction, self-regulation, and perception of self-efficacy (Bandura, 1989). Self-efficacy is a major construct of this theory. It is a judgment of one's ability to carry out a particular course of action. The greater the perceived efficacy, the more vigorous and persistent individuals will be, to engage in a behavior. In addition, the concept of self-efficacy is related to an

appraisal of skills needed for coping with a particular health threats or barriers (Bandura).

For this study, the SCT was used to examine the variable of confidence/efficacy with BSE of staff nurses including efficacy towards BSE procedures and BSE barriers management and its relationship with BSE practice. According to the model, the practice of breast self-examination should be increased when a nurse perceives that she is capable to perform her breast self-examination. Perceived self-efficacy has been found to be correlated with health-related behaviors including BSE practice (Anderson, 2000; Sanitzer, 1990; Sangchan et al., 2008). The model of this study is presented in Figure 1.

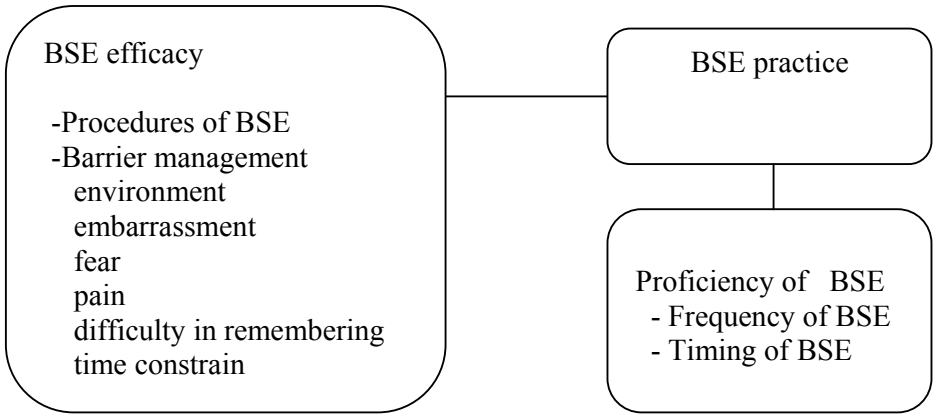

Figure1

A Model of Relationship Between BSE Efficacy and BSE Practice

Hypothesis

There is a positive relationship between BSE efficacy and BSE practice among staff nurses.

Definition of Terms

BSE efficacy refers to a judgment of nurses' perceived competence at BSE ability to perform breast self-examination to detect abnormal breast lumps and to manage or overcome the BSE barriers (e.g. environment, embarrassment, fear, pain, difficulty in remembering, and time constrain). It was measured by the 15-item BSE efficacy questionnaire, using a 5-point Likert scale. The higher scores indicated the higher level of BSE efficacy.

BSE practice refers to the BSE practice of nurses during the past one year whether they did practice or did not practice. BSE practice includes the frequency and timing of BSE performance as well as correct position and technique to examine her breast in order to detect breast lumps or abnormalities. It was measured by the 2 parts (BSE practice and BSE proficiency) of BSE practice questionnaire.

Scope of the Study

This study was aimed to determine BSE practice among female nurses working in Rangpur Medical College Hospital, Bangladesh and to examine the relationship between BSE efficacy and BSE practice. The data were collected during November, 2009 to January, 2010. Only nurses who worked during this period were enrolled.

Significance of the Study

The baseline data provided in this study can be used to develop intervention/strategies to increase BSE efficacy and thus increase BSE practice among nurses and other groups of Bangladeshi women.

CHAPTER 2

LITERATURE REVIEW

This chapter presents the literature review of the theoretical and empirical concepts of this study. The scope of literature review includes the following concepts.

Breast cancer

Prevalence of breast cancer in Bangladesh.

Risk factors of breast cancer

Screening of breast cancer

Breast self-examination practice among women

Self-efficacy and its relation to breast self-examination practice

Measurement of self-efficacy and BSE efficacy.

Factors related to breast self-examination practice among Bangladeshi women

Breast Cancer

Prevalence of breast cancer in Bangladesh. The increased incidence of breast cancer and breast cancer deaths in Bangladesh makes breast cancer a matter of serious concern like other developing countries. Breast cancer diagnosis, therapy, epidemiology, research, and control in Bangladesh appear to be far behind other developed countries in the world (Love, 2006; Lynch & Rahim, 1981). Early cancer detection program, available treatment option and health information facilities in Bangladesh are relatively fewer than in other developed countries (Sultana, 2000).

The oncology status is very poor and still absent in some places. Tumor registration is severely limited like other developing countries including Bangladesh (Iqbal, 2006; Seif & Aziz, 2000). Contributing to the low priority given to breast cancer is the profound poverty of the population, frequent malnutrition, diarrhea, cholera, and other infectious diseases, as well as severe problem of overpopulation with little likelihood of its abatement in the near future. Therefore, little attention is given to late onset of chronic diseases, particularly cancer. Certain cultural-religious practices of the predominantly Muslim women of Bangladesh strongly influence the problem of delay treatment (Lynch & Rahim; Sultana).

Around 30 percent of female cancer patients of Bangladesh have been found to be suffering from breast cancer (Sultana, 2000). Considering low resources and lack of modern equipment and trained manpower for a developing country like Bangladesh, we suggested self-examination of breast stated by Zabeen, (2005). We have to be aware of breast cancer, especially women, who are very much vulnerable to the disease, and should self-examine breasts in every month (Zabeen).

Bangladesh, however, is having a low level of public awareness of the importance of early treatment for breast problems and almost no breast health services, unlike other countries where the majority of women with breast problems go to major hospitals for care. Many women in Bangladesh either never seek treatment or arrive at hospital with late-stage cancer, which is often untreatable (Salim, 2007). Several factors like social, economic, health-system and political issues are related to these circumstances, complicating the situation. Some non-government organizations are working to provide health clinics throughout the country. “Amader Gram” project

is one of the assuring prompt and supportive cares for Bangladeshi women with breast problems (Salim).

Based on literature review and comparing developed and developing countries, some causes of high prevalence rate of breast cancer and breast cancer morbidity in Bangladesh is similar to other developing countries. But the control and awareness campaign program is small in number.

Risk factors of breast cancer. Several factors are associated with increased risk or development of breast cancer. These include a wide range of variables extending from socio-demographic/ reproductive/clinical characteristics of individuals, to cultural and environmental elements (Vahabi, 2003). The risk factors of breast cancer are classified into two groups including non-modifiable factors and lifestyle related factors (ACS, 2007).

Non-modifiable factors:

Gender. Breast cancer is the most common cancer among female. Breast cancer is about 100 times more common among women than men (ACS, 2007).

Age. Breast cancer mostly occurs after 30 years of age and 2 in 3 cases of breast cancer patients were found among those who are older than 50 years of age (ACS, 2005). During 2000-2004, 95% of new cases and 97% of breast cancer deaths occurred in women aged 40 and more (ACS, 2007).

Genetic. 5 to 10% of breast cancer cases result from inherited mutations or alterations in the breast cancer susceptibility genes, BRCA1 and BRCA2 (ACS, 2007).

Family history. Breast cancer risk is higher among those patients whose close blood relatives have this disease. The blood relatives can be from mother's or father's side of the family. Especially a first degree relative such as mother, sister, or daughter with breast cancer approximately doubles the risk of breast cancer occurrence among women, and if two of the first degree relatives suffer from breast cancer, it increases the risk by 5-fold (ACS, 2005; 2007).

Reproductive history. Women who are at the stage of first full-term pregnancy, early menarche (before age of 12), and late menopause (after age of 50) have a slightly higher risk of breast cancer (ACS, 2005; 2007).

Health history. We focus on the history of mammographic pattern of dysplastic parenchyma. Cancer in one breast has a 3-fold to 4-fold increased risk of developing cancer in another breast (ACS, 2005; 2007). Previous breast biopsy is diagnosed as proliferate breast disease with the result of atypical hyperplasia increases the risk of developing breast cancer in women by 4 to 5 times. Previous irradiation i.e. women who have undergone the chest area radiation therapy during childhood or young adulthood as treatment for another cancer have a significantly increased risk of breast cancer (ACS).

Life style-related factors: The life style-related factors in developing breast cancer include not having children, induced abortion, no breast feeding, alcohol consumption, smoking, obesity, physical activity, environment effect, oral contraceptives, estrogen replacement therapy, high socio-economic status, high fatty diet, and others (ACS. 2005; 2007).

In Bangladesh, 79% of the total populations live in rural area, but risk factors of breast cancer are higher in urban women than in rural women, and several factors also influence the increased development of breast cancer in urban women more than in rural women. These include delayed child birth by delaying marriage, promotion of family planning, and declining breast feeding (Sultana, 2000). Although smoking habit does not play any role in developing breast cancer, village women and women working in tobacco growing areas and urban women of higher classes (very few) using tobacco and alcohol are at higher risk of developing breast cancer. But also some patients suffering from breast cancer belonging to all classes of women in Bangladesh are not going for treatment because of ignorance, shyness, social taboos, and economic austerity (Sultana). Common risk factors of Bangladeshi women for developing breast cancer are daughters of breast cancer patients, less breast feeding, high fatty food, and tobacco smoking (Iqbal, 2006).

Screening of breast cancer. The treatment of breast cancer and increasing the survival rates of women suffering from breast cancer is possible by the detection of a tumor at an early stage when tumor is still small and typically no symptom appears. Therefore, it is very important for women to follow recommendations for finding breast cancer at an early stage before symptoms develop. American Cancer Society (ACS, 2007) recommended a guideline for early detection of breast cancer depending on age which includes mammography, clinical breast examination, and breast self-examination.

Several researchers revealed that mammography, regular physical examination by a health professional, and monthly BSE continues to be three major

modalities to detect breast cancer at an early stage that can increase women's survival rates (Foster, et al; Greenwald, et al., as cited in Gray, 1990; Han et al., 1996; Ozturk, Engin, Kisioglu, & Yilmazer, 1998). The followings are detailed descriptions of each method.

Mammography: Mammography is the most sensitive and reliable method for breast cancer screening. It is a low-dose x-ray procedure that allows visualizations of the internal structure of the breast. Screening mammography is used to detect breast cancer in a more accurate way once the symptoms are not visible, but like most of the medical test, it is not available and accessible in every setting. Several studies showed that women who follow breast cancer mammographic screening recommendations have more possibility to detect abnormalities thus treated at an earlier stage which can decrease their mortality by an estimation of 20%-40% (Kerlikowske, Gray, Rubin, Sandrock, & Ernster; Roberts, et al., Shariro, Tabar, et al; Day, as cited in Takakuwa et al., 2000).

Advantages. Mammography is more effective in cancer screening. Small size and asymptomatic (no symptom) tumor can be detected by practicing this method. Disadvantages. Mammography is not always recommended due to discomfort, expensive, availability, risk related to the radiation exposure, needs of qualified radiologist and equipments, beliefs of other methods (BSE or CBE), need of recommendation from the experts, doubt of surgical treatment if there is no a symptom or family history.

Clinical breast examination: Clinical breast examination (CBE) is the commonly employed screening technique for breast cancer (Otto, 1997). Between the

ages of 20-39, there are the average risks of asymptomatic breast cancer, thus every woman should have a clinical breast exam every 3 years; and after the age of 40, every woman should have a clinical breast examination every year for earlier detection (ACS, 2005). CBE is also an opportunity for women and nurses/health care providers to identify and discuss changes in breasts, early detection testing, and factors that affect the development of breast cancer (ACS).

Advantages. CBE is the most commonly employed, significantly contributed to reduce mortality rate. It is effective for the elderly women to detect small size tumor, and it is an opportunity to teach BSE technique and encourage the continuity of monthly BSE at home. Identifying risk factors of breast cancer, discuss signs and symptoms of breast abnormalities, building relationship of trust between health professional and the client, and improve participation in breast cancer screening activities are also facilitate by CBE. Disadvantages. In performing this method needs resources and availability, extra proficient personnel, and client may feel discomfort.

Breast Self-Examination (BSE): The BSE is an examination of breasts performed by a woman on her own. The best time for BSE is about one week after the end of the menstruation period, when the breasts are not tender or swollen. Women, who have regular menstruation period, should do BSE on the same day of every month. Women who are pregnant, doing breast-feeding, or having breast implants also need to do regular BSE. By regularly examining her own breasts, a woman is likely to notice any changes that occur (ACS, 2007).

Advantages. BSE is a self-performed, useful, free, private, readily available, and relatively simple examination. Majority of breast lumps are detected by women herself. Smaller tumor or lump can be detected and it is recommended at all ages (20 and over). Comparatively, it is easily acceptable and effective than other methods.

Disadvantages. Effectiveness remains controversial among some researchers regarding developed countries where another two methods (mammography and CBE) are available.

There are some limitations, particularly in terms of proficiency of practitioners. The sensitive of BSE practice is varying from 26-80% (ACS, 2008). The recent study (Lerner, 2002) found that there was no benefit to teach BSE, especially for those women aged over 40 years, because it had no impact on breast cancer mortality. However, the benefits are increasing women's sense of control and developing good screening habit. So, it is necessary to promote the accuracy and monthly BSE practice. BSE is recommended for countries that cannot afford the development of sophisticated screening services such as mammogram/ultrasound.

International Agency for Research on Cancer (IARC Screening Group, 2008) defined BSE as a routine examination that should be carried out at the same time each month to physically check for any lumps or other changes by looking and feeling by themselves. It includes inspection, palpation, and sensation of the breasts in both standing and lying positions. The components of BSE for getting proficiency in practice includes inspection of the breast in front of a mirror, palpation of the entire area of the breast using the flat pads and the fingers at different level of pressure in a specific pattern and motion within that pattern (i.e., small dime-sized circles in a

vertical strip, wedge, or circular pattern), it is most easily done in a flat or partial side-lying (upper body turned at 45 degree angle) position.

It is recommended that women can choose suitable time for BSE practice which is 7-10 days after menstrual period. During this time, breasts are not swollen due to blood congestion, breasts are also soften and easier to examine. Post-menopausal women should do BSE at least once a month by choosing any days on their convenience. They should spend about 5-10 minutes with BSE practice consisting of three positions as follows: (Pethsirason, 2002).

In front of a mirror: 1) With arms at both sides of the body, then raise above the head; 2) Look carefully for changes in the size, shape, and contour of each breast; 3) Look for puckering, dimpling and changes in the skin texture; and 4) Gently squeeze each nipple and look for discharge. Lying down**:** 1) Place a pillow under the right shoulder; 2) Place right hand behind the head; 3) Examine the right breast behind the left hand; 4) With finger flat, gentle press in a circular motion; 5) Starting at the outside top edge and spiraling toward the nipple; 6) Include the underarm and the area below the breast; and 7) Repeat each step for the left breast in the same manner. While showering: 1) Raise the right arm and use the left hand to examine the right breast; 2) With fingers flat, examine the breast using a circular motion; and 3) Touch every part of the breast, including the underarm, gently feels if there is a lump or thickening.

However, combined approach is clearly better than any single examination. BSE or CBE without mammography would miss the opportunity to detect many breast cancers which can be detected by mammography only and are too small to be

detected by woman or her doctor. Although mammography is the most sensitive screening method, some breast cancers do not show up on mammogram but can be felt by a woman or her doctor (ACS, 2007). Recommendations for breast cancer screening in women are shown below (ACS).

Table 1

ASC (2007) Recommendation for Breast Cancer Screening

	Test		
Women	BSE	CBE	Mammography
Women with age (years)			
20-39	Every month	Every 3 years	----------
40-49	Every month	Every 3 years	Every 1-2 years
≥50	Every month	Every year	Every year
Women with Risk factor			
Breast cancer history	Every month	Twice a year	Every year
Family history of Breast cancer	Every month	Every 6-12 month	Age over 35 years

Breast Self-Examination Practice Among Women

Previous researches found that although most women (96-99%) have heard about BSE, only 15- 40% performed BSE regularly (Alagna & Reddy; Morra; Carter, Feldman, Tiefer, & Hausdorf; as cited in Lauver & Angerame, 1988; Chee et al., 2003). Most women have never performed BSE due to the lack of knowledge and

confidence. The higher level of education in nursing curriculum in college level, nursing work experience, the greater knowledge of breast cancer and BSE technique, the greater confidence in performing BSE were identified to have significant relationship with BSE practice. The results indicated that 66% of the nurses had performed BSE. Approximately 62% of them reported that they learned BSE from their college curricula (Alsaif, 2004). Thirty to fifty two percent of the subjects reported that they have learned BSE from their work experience (Salem & Hassan, 2007). BSE practice of women can be increased by providing continual educational program. The results of this study have shown that the BSE practice had increased from 18.4% to 92% after educational program (Sangchan et al., 2008).

Even BSE practices among female health workers were found to be rather low in number (21.9%) (Canbulata & Uzun, 2008). It was suggested that the health workers should have responsibility not only for the improvement of public health but also that of their own health. In order to improve early detection in the general women, it is very essential for the health workers to be able to recognize the major risk factors, identify the women who are at risk to develop breast cancer, and also the symptoms associated with breast cancer. Several studies examined the BSE practice among female health workers including physician, nurses, and midwifes. Therefore, it is also suggested that research studies should be conducted to investigate female health workers' BSE screening behaviors considered on specific influences that impact health workers' belief. BSE performance of health workers can be linked to women's BSE practice, because general women are likely to imitate the behaviors of

health workers believing they are setting proper health care examples (Bandhura, 1997; Canbulata & Uzun).

Another study conducted by Kim, Lee, Ahn, and Chung, (2003) also measured nurses' low level of BSE practice due to the lack of knowledge of breast cancer and BSE. This study also suggests that in order to enhance nurses' performance rate of BSE, nurses, as a role model for health promoting behaviors, it is urgent to provide educational program in breast cancer and BSE practice for the nurses.

In accordance with the ACS recommendation, a significantly higher BSE percentage was found in a nation-wide representative sample of female physicians' BSE practice than female workers' BSE practice, in relation to demographic and working situation. The positive association was found between being a physician and practicing BSE (Rosvold, et al., 2001).

Self-Efficacy and Its Relation to BSE Practice

Self-efficacy refers to one's self-judgments of personal capabilities to initiate and successfully perform specified tasks at designated levels, expends greater effort, and perseveres in the face of adversity (Bandura, 1997). The strength of people's convictions in their abilities affects their decisions whether or not they will attempt to cope up with a given situation (Bandura). The consistent concept of Bandura's Social Cognitive Theory (SCT) can provide an integrative approach to study the BSE behavior in which self-referential thought is the mediating influence between knowledge and action. The confidence of women's ability to perform BSE

and control over the negative findings is directly related to the frequency and proficiency of BSE practice. Performance completely requires both skills and beliefs in personal efficacy, it requires the association of cognitive, social, and behavioral skills incorporated into courses of actions that can serve many purposes (Bandura, 1986).

Self-efficacy is derived from four principal sources of information: performance accomplishment, vicarious experiences, verbal persuasion, and emotional arousal or physiological state (Rosenstock, Strecher, & Becker, 1988).

Performance accomplishment. Performance accomplishment is one's achievements in overcoming difficulty or previously feared tasks. It shows the direct evidence of performance capabilities so it is the most important source of efficacy expectation. Previously achieved success increases the perceived self-efficacy which motivates one to endeavor for more difficult action and tends to perform easily in other situations (Sainitzer, 1990), which simply means, previous success raises self-efficacy.

Vicarious experiences. It refers to the live and/or symbolic modeling of the successful performance against the frightening or challenging activities. Modeling can have an influence in conveying effective copping strategies and raising the self-efficacy in those who have previously undergone experiences confirming their inefficacy. "If they can do it, I can do it as well", this is a process of comparison between oneself and someone else. This behavior with clearly defined and rewarding outcomes is most effective in self-efficacious appraisals of one's capabilities (Bandura, 1986).

Verbal persuasion. Verbal persuasion refers to the uses of suggestion, exhortation, self-instruction, and interpretive treatment to motivate people that they can cope up with their fears (Bandura, 1997). Under these circumstances, people are likely to try harder to develop the requisite skills and mobilize greater effort to succeed. While positive persuasions increase self-efficacy, negative persuasions decrease it.

Emotional arousal/ physiological state. These kinds of efficacy expectations provide individuals with information about their level of anxiety and vulnerability to stress (Anderson, 2000). A person's perceptions in unusual, stressful situations, commonly exhibit signs of distress can markedly alter a self-efficacy. High physiological arousal usually impairs performance of people who are more likely to expect failure when they are feeling tense and nervous, thus they rely on some degree or level of their state of physiological arousal in judging their vulnerability to an anxiety producing situation (Bandura, 1997). Fear generates more fear through anticipatory self-induced thoughts (Bandura, 1986).

Through modeling experiences, anxiety arousal to threats can be diminished i. e. through vicarious experience and participant modeling can also be eliminated by mastery of experiences (Bandura, 1997). Besides modeling approaches, diminishing aversive arousal is the teaching of effective coping skills by demonstrating ways of dealing with threatening situations. When fear results from behavioral deficits, modeling approach is especially important. In order to achieve the desired goals, a higher level of perceived self-efficacy allows individuals to manage the environment positively. A lack of coping skills is the

result of avoidance behavior (Bandura). When individuals believe that a future outcome will be the result of a given behavior, this conception can generate motivation for behavior. To evaluate a performance accomplishment, self-reward contingencies are another source of motivation that occurs when an individual establishes personal standards. Thus, one may select a goal and creates personal incentives to attain that goal (Bandura).

The concept of self-efficacy provides the structural importance to the health screening behaviors, like BSE, that involves subjecting oneself to the risk of a potentially negative finding and the stress associated with making a decision based on that finding. Being prepared with the effective strategies for dealing with a potential health threat, reducing that threat, and increasing the probability of continuing with the health screening behavior (Anderson, 2000; Lauver, as cited in Sanitzer, 1990). Bandura's concept of self-efficacy which consists of two aspects is extremely important to BSE, competence in performance of BSE and the competence in dealing with the possibility of an abnormality (Lauver, as cited in Sanitzer).

An increase in the self-efficacy leads to an increase in the BSE practice by enabling women to perform BSE at an appropriate level or successfulness. To promote BSE practice, self-efficacy must be enhanced and should be considered as one of the most important factor of women. The subject showed strong belief in breast lump as a causative factor of breast cancer which had a significant correlation with BSE practice (Salem, & Hassan, 2007). Greater confidence on BSE leads to a greater performance on BSE practice. Confidence in the ability to perform BSE was associated with nurse's teaching of BSE and supported the findings of others. Even

though a majority of the nurses were reported to perform BSE, but only small proportion were reported as being "very confident" about their ability to perform BSE (Han et al., 1996).

Another research study indicated that there are factors such as knowledge of breast cancer and knowledge of BSE technique which can influence women to practice BSE regularly (Alanga & Reddy, as cited in Sainitzer, 1990). Results of this study revealed that the variables which showed a consistent relationship to the frequency of BSE performance were knowledge of BSE technique, belief in BSE as a detection procedure, and self-confidence in the BSE performance. Self-confidence in performing BSE was also a strongest determinant of the proficiency in practice. The study also explained about the conceptual difference between the belief that the BSE technique has a value and another belief that women can perform that technique successfully. The study also proved that although knowledge of the correct BSE technique is essential, it is not sufficient to motivate the women to practice BSE (Alagna & Raddy, as cited in Sainitzer).

Furthermore, a descriptive study conducted by Champion (1992) showed that the confidence in performing BSE was significantly well-correlated with the three dependent variables of intent, frequency, and proficiency of BSE, while there was a moderate correlation between confidence and knowledge of BSE technique (r =.20 to .40, p = <.05). A significantly positive association has been found between BSE practice and BSE self-efficacy. Cronbach's alpha coefficient was 0.65-0.89 and Spearman's rank correlation coefficient was 0.35-0.58, $p < 0.01$ (Lauver & Angerame, 1988).

Measurement of Self-Efficacy and BSE Efficacy

Self-efficacy is commonly understood as being domain-specific; that is, one can have more or less firm self-beliefs in different domains or particular situations of functioning, but some researchers have also conceptualized a general sense of self-efficacy. Based on the literature review, a number of scales were developed to measure general self-efficacy and behavior specific self-efficacy.

Measurement of general self-efficacy. The General Self-Efficacy (GSE) scale could be applied to different cultures and could be measured in different languages. It was translated and tested in different languages including English, Chinese, Indonesian, Japanese, Korean, and Thai (Sukmak, Sirisoonthan, & Meena, 2001). This self-efficacy scale aims at a broad and stable sense of personal competence to deal efficiently with a variety of stressful situations. To examine the coping of people in daily life bothers as well as the adaption after experiencing various kinds of stressful events. The two general self-efficacy scales are reviewed as follows.

The GSE scale was created by Schwarzer & Jerusalem (as cited in Schwarzer & Jerusalem, 2000). They used the 10-item scale with same response format which randomly mixed into a larger group of items. The 4-point Likert scale ranged from 10-40, Cronbach's alphas were .76 to .90. A positive correlation was found in favorable emotions, dispositional optimism, and work experience. A negative correlation was found in depression, anxiety, stress, burnout, and health complaints.

The German version of this scale was originally developed by Matthias Jerusalem and Ralf Schwarzer in 1981, first as a 20-item version and later as a reduced 10-item version with 4-point Likert scale (Jerusalem, & Schwarzer, as cited in Schwarzer, & Jerusalem, 2000). The response format was, (1) not true at all, (2) barely true, (3) moderately true, (4) exactly true. A numerous research projects were conducted with internal consistencies between alpha = .75 and .90. This scale is parsimonious and reliable as well as proven convergent and discriminant validity. It also correlates positively with self-esteem and optimism and negatively with anxiety, depression and physical symptoms.

Measurement of behavior specific self-efficacy. Several behavioral self-efficacy scales were developed. These include the Caring Efficacy Scale (CES), Nutrition Self-Efficacy Scale, Physical exercise self-efficacy scale, smoking cessation self-efficacy, alcohol resistance self-efficacy scale, etc. The Caring Efficacy Scale (CES), developed by Coates (1997), assesses the conviction or belief in one's ability to express a caring orientation and to develop caring relationships with clients or patients. Coates provides outlines initial reliability and validity development of the Likert-type self-report scale to assess nurses' caring efficacy. It experienced nurses from three nursing programs: baccalaureate, masters, and doctorate. The CES was found to have high internal consistency (alpha = .84) and it possessed significantly positive relationships with a measure of clinical competence. The original CES contains 46 items, and subjects responded on a 6-point Likert-type scale; strongly disagree (-3) contains 7 negatively worded items and strongly agree (+3) contains 39 positively worded items. Positively worded items were converted to a 1-6 scale for

scoring purposes, and negatively worded items were reversed. Items were reviewed for content validity by nursing faculty members in the United States and Canada (Coates).

CES also meets Bandana's criterion which measures a particularized self-efficacy belief (Manojlovich, 2005). Caring has been identified frequently as being the heart of the nursing role, as well as being one of the most essential attribute of being a nurse. The CES is a 30-item self-reporting tool, arranged in a 6-point likert-type format. Items are balanced between positive and negative content, scores are summed and averaged, with higher numbers associated with higher efficacy beliefs. The scale in its current form has been tested for its content (via expert group) and concurrent validity. Cronbach's alpha reliability coefficients are ranged from .85 to .92 and for this study, Cronbach's alpha was .89 (Manojlovich).

Measurement of BSE self-efficacy. Several BSE self-efficacy scales were developed to measure whether women believe that they are able to perform the BSE.

Luszczynska and Schwarzer's BSE self-efficacy: Luszczynska and Schwarzer's Breast self-examination (BSE) self-efficacy scale was developed by Luszczynska and Schwarzer (2003). The scale consisted of 2 dimensions including; pre-action BSE self-efficacy and maintenance BSE self-efficacy. 1) Pre-action BSE self-efficacy: This type of BSE self-efficacy is related to the intention to perform BSE. Pre-action BSE self-efficacy contains 3 items, the subjects response format of those items were a 5-point Likert-type scale; 1-definitely not, 5-exactly true (Luszczynska & Schwarzer, 2003). The examples of items from the scale: I am able to perform BSE regularly- a)...even if I have to make a detailed plan describing how

to remember about BSE, b) …even if I have to rethink about my behaviors and opinions concerning BSE, c)…even if, I have to overcome my previous habit which drawbacks the BSE practice. The study found a good internal consistency. The Cronbach's alpha was .81. 2) Maintenance BSE self-efficacy: This type of BSE self-efficacy is related to behavior. It is only a two-item self-administering tool, arranged in a 5-point Likert-scale. (Luszczynska & Schwarzer, 2003). Examples of items from the scale: I am able to perform BSE regularly even if I need a long time to develop necessary routines, or I am able to perform BSE regularly even if I have to try several times before it works. The response format of items is: 1-definitely not, and 5- exactly true (Luszczynska & Schwarzer). The reliability alpha was .77. Strength: This measurement scale has good reliability, single and brief scale, and is easy to measure. Weakness: The scale of the measurement can be too brief sometimes.

Lewis & Sanitzer's BSE self-efficacy: Lewis and Sanitzer's BSE self-efficacy scale was developed to measure the level of certainty or belief that an individual have, regarding that person's capabilities to perform certain dimensions of BSE. The scale was developed in three phases; 1) The first phase involved an extensive review of literature on the practice of BSE and related measures, 2) the second phase involved conceptually mapping out the domain areas in BSE in which a person could potentially have self-efficacy, 3) the third phase involved the generation of multiple items for each domain area and expanded by Lewis and Sanitzer. There were three theoretical subscales which developed based on the process of activity; perceived self-efficacy over motor performance, perceived self-efficacy over motor

judging, i.e., distinguishing normal versus abnormal tissue, and communicating the discovery of potential abnormal findings.

The alpha internal consistency reliability coefficient for the total self-efficacy scale was .96 and the standard item alpha was .96, the mean inter-item correlation was .65. The total item correlation coefficients range from .67 to .86 (Sanitizer, 1990). For measuring the frequency of BSE performance, the items were examined for kurtosis and skewness. Both values were close to zero. One item that was shown to be most variability from the questionnaire was "How often have you performed BSE within the last six months"? For the proficiency scales, the alpha internal consistency reliability coefficient was .71. The mean inter-item correlation was .29 and the total item correlation coefficients ranged from .28 to .59 (Sainitizer). Strength: This type of measurement can cover every area by using larger items to measure of both BSE self-efficacy and BSE practice. The highest variance and closest to normally distributed items were used in this analysis.Weakness: The researcher could not have clarified for better understanding of the meaning of answer of some items which the subjects commented on the repetitiveness of the questionnaire.

Anderson's BSE self-efficacy: Anderson's BSE self-efficacy was a two-item questionnaire. The first item asked about the level of skill that one could perform in each step of the BSE, and second item asked about how comfortable one would feel when performing each of these steps. It was a 11-point Likert scale ranging from 0-11, 0 (not at all skillfully or comfortable) to 10 (very skillfully or comfortable). Cronbach's alpha coefficient was .72. The item is rated by the participants of their efficacy expectation on 0-10 where 0 indicated that they are absolutely uncertain of

their ability to perform BSE and 10 indicated that they are extremely certain (Anderson). Strength: Few items make it easy for the researcher to assess the result. Weakness: By having only a few items (only two), it might confuse the participant covering each step of BSE procedure (thoroughness of BSE practice) thus efficacy scale can be less reliable.

Considering all of the above scales, Lewis & Sanitzer's BSE Self-Efficacy scale is the most appropriate and applicable in measuring BSE self-efficacy and BSE practice for this present study. The items on self-administered questionnaire, modified from Bandura's Micro-analytic Methodology elicited responses based on the actual components of BSE and the participants perceived self-efficacy when performing BSE. The measurement of Sanitzer's tools was also covered to measure self-efficacy and BSE practice. For better clarification on each item, the researcher then modified some questionnaires by reviewing other studies.

Factors Related to BSE Practice among Women

Based on the previous studies, there are many factors that are related to BSE practice which includes age, marital or partnership status, religion, BSE knowledge, work experience, educational and income level, maternal or family history of breast cancer, personal history of breast disease, fear of finding lump, health beliefs variables like, perceived seriousness, susceptibility, benefits, and barriers.

Age. Several studies showed that age of women is significantly associated with performing BSE. Younger women were likely to practice BSE more frequently

and correctly than older women. Women at the age of 30 and older were significantly more likely to perform BSE every month with the prevalence rate of 24.4% (Chee et al., 2003). Although the prevalent rate was higher in this age group, studies showed that older women (55-older) were taught BSE less frequently and they performed BSE less often, (National Cancer society; Celentano, Shapiro, & Weisman, 1982; FrankStomborg, as cited in Champion, 1992) which ultimately affects the BSE practice among the women (Hirst; Howe & Hoff, as cited in Champion). In the women of the age of 35-44, 45-54, and 55-older, BSE behaviors were correlated with the variables (need specific variable) in this study. Thirty-two percent were accounted for the variance in youngest group (35-44 years), thirty-seven percent were accounted in the age group of 45-54, and thirty percent were accounted in the age group of 55 and older. The regression equation was most significant in the youngest age group (F= 6.50, p =.00). Confidence and barriers were the significance predictor of BSE in older group women (Champion).

Knowledge of breast cancer and BSE practice. Findings of different studies showed that a ratio of knowledge of breast cancer and practice of BSE is significantly associated with BSE frequency and proficiency. In developing countries, the researchers examined that intervention with education was effective for the improvement of frequency and proficiency of BSE (Ozturk et al., 1998). The ratio of knowledge about BSE in the experimental group increased from 30.03 to 77.4% while it was 50.8% in the control group. Similarly, the ratio of subjects who regularly performed BSE in the experimental group was found to be increased from 19. 0 to 61.3% while the same ratio was found to be 39.7% in the control group (Ozturk et al).

The study concerning nurse's personal BSE practice showed that the method of BSE instruction through booklet, film, and group discussion and individual teaching produced a significant improvement in the performing the technique of BSE (Agars et al., as cited in Ozturk et al). BSE knowledge and practice variables indicated a significant positive relationship ($r = .1216$: $p = .023$) (Gray, 1990).

Education and income. Studies revealed that higher education and income levels were positively correlated with more than one staff nurse frequency of BSE (Champion, 1987; Han et al., 1996; Ozturk et al., 1998; Takakuwa et al., 2000). The results of the study indicated that 66% of the sample had performed BSE regularly. Approximately 62% of those who perform BSE said that they learned information regarding BSE in their college curricula (Alsaif, 2004). The significant relation was found between higher levels in nursing college and BSE practice. Except for age, no significant relation was found between the socio-demographic factors and BSE practice. The sample showed strong belief in nipple discharge as a causing factor of breast cancer and had significant correlation and BSE practice. Positive correlations were found between nursing students BSE practice and their academic experience in nursing college.

A higher percentage of nurse's frequency of BSE was found in the teaching group at least monthly (61.9%), compared with the non-teaching group (43.6%). Preventive behaviors were significantly more likely to be performed by higher income and privately-insured women. Women with lower income and without private insurance were less likely to practice BSE measures for detecting breast cancer (Takakuwa et al., 2000). Internal consistency reliability scale was reported at .81, but

it was found in this study only .28. Fifty-two percent of nurses in the teaching group had a friend with breast cancer compared with the non-teaching group. Competence in performing BSE was also significantly higher in the teaching group (mean 39. 13 ± 4.6) than in non-teaching group (mean 36. 84 ± 5.0, t (138) = -2.14, p = .04) (Han et al., 1996).

Work experience. Work experience is one of the major factors that can influence knowledge and practice of performing BSE. Fifty-two percent of subject performs BSE and approximately 30% of them who performed BSE reported that they learned the practice and knowledge regarding BSE during their work experience. The significance relationship was found between higher levels of work experience and BSE practice. There is significant difference between teaching group and non-teaching group of nurse's work experience, work experience in teaching group was more (mean =16.25 ± 8.0) than in non-teaching group (mean = 11.49 ± 8.5 [t (138) = -2.59, p = < .051] (Han et al., 1996). A significant relationship was also found between nurses' higher level of work experience and BSE practice. Among 50% of nurses who performed BSE, approximately 30% performed with the experience gained from their work experience (Salem & Hassan, 2007).

Family history of breast cancer. Family history is very important in determining breast cancer risk. Medical risk factors especially family history of breast cancer is higher among women whose close relatives have this disease. Studies showed that women with a maternal or family history of breast cancer, especially a first-degree relative (mother, sister, or daughter), or having friends with history of breast cancer are likely to practice BSE more frequently (Han et al., 1996; Takakuwa

et al., 2000). If there is a history of more than one first-degree relative having breast cancer, the risk of developing breast cancer is higher.

Culture. The research findings among the Muslim women have identified many factors related to their BSE practice. Although health promotion and disease prevention are highlighted and encouraged in the Holy Qur'an and the Prophet Mohammed's (SAW) teaching, some Islamic teachings may create hindrance in performing BSE among Muslim women, especially those Islamic views related to female modesty (Bottorff, et al; Underwood, Shaikha, & Bakr; as cited in Sangchan et al., 2008). The results of implementation of BSE program among Thai Muslim women showed statistically significant difference between pre-test and post-test findings of the perceived benefits of BSE ($p < .05$), perceived barriers of performing BSE ($p < .001$), BSE self-efficacy ($p < .001$), BSE proficiency ($p < .001$), and BSE practice ($p < .001$). The BSE practice among Thai Muslim rose after establishing program from 18.4% to 92.0% (Sangchan et., al.).

Marital status. Studies showed that women who are married and have young children, are on oral contraceptive pill and had a medical examination within the last five years, are likely to perform BSE practice monthly. Women with early child birth are less likely to practice BSE than those who gave birth at older age. Although the policy is to target all sexually active women in practice, married women have more access in a variety of reasons. One reason is that the previous nation-wide campaign policies were for married women only (Chee., 2003; Salem & Hassan, 2007).

Health belief model variables. Health belief model variables like perceived susceptibility, seriousness, benefits, barriers and health motivation are strongly associated with BSE practice. Based on the Health Belief Model (HBM), the susceptibility of an individual with the disease (susceptibility) and the severity of a disease, at least at a moderate level, of an individual can have a severe impact on some components of her life (seriousness). By taking a particular action to reduce the severity of a disease or to increase her life expectancy would be beneficial for her (benefits), but sometimes the action of an individual would not be able to overcome some important barriers. In addition, being concerned about the health and feeling a sense of control over heath outcomes can be closely related to the individual's practice of behavior. A Likert format was used for measuring attitudinal variables; susceptibility, seriousness, benefits, health motivation, and confidence (Champion, 1993).

A previous study found that barriers, knowledge, and susceptibility were significantly correlated with frequency of BSE practice ($R = .53$, $p = < .01$) (Champion, 1987). Champion (1988), also examined that the frequency and total proficiency for BSE were predicted by health motivations, susceptibility, and barriers and results showed that they are significantly correlated with these variables ($R = .61$, $p = < .001$). There was a significant relationship found between BSE practice and perceived risk and affect. The study also revealed that general anxiety and breast cancer worry are strong predictors in performing BSE (Bowen, Alfano, McGregor, & Anderson, 2004). Perceived barriers are also significantly related with performing BSE. Champion found that women with many barriers to perform BSE are infrequent

practitioners and low perceived barriers are positively correlated to frequency of BSE practice (Champion, 1987; 1988; and 1992; Gray, 1990).

Stillman (as cited in Champion, 1987) found that 97% of the women scored a high level in perceived benefits of BSE in reducing the threat of breast cancer. The reason of women for not performing BSE was due to the lack of instruction, being too busy, and preferring not to think about it. The study also found that the variables of barriers relate to the negative aspects of taking action on BSE. Hellal (1982) and Stillman (1977) reported that barriers have shown the greatest impact on the frequency of breast self- examination. Trota (1980) and Champion (1985) found barriers accounts for 23% of the difference in frequency of conducting the breast self-examination when using multiple regressions (as cited in Champion, 1987). Fear of finding lumps is a significant barrier to the practice of BSE as a regular health screening behavior. Survey reported that 46% of women thought that the conducting of BSE caused them to worry unnecessarily (Anderson, 2000, O'Malley & Fletcher, as cited in Senitzer, 1990; Takakuwa et al., 2000).

Description of author's (Gray) adaptation of HBM to the BSE is expected to adopt the monthly practice of BSE. A woman must hold several beliefs that she is personally susceptible to breast cancer, breast cancer would have moderate consequences on her life style, and BSE will be beneficial in preventing or reducing the severity of breast cancer. In performing BSE, there are few barriers which are not involved in the overcoming of the occurrence of breast cancer such as cost, unpleasantness, inconvenience, embarrassment, fear, pain, or difficulty in remembering to conduct the regular examination (Gray, 1990). The previous studies

also revealed that knowledge, barriers, and susceptibility are significantly correlated with frequency of BSE practice (R =.53, p = < .001). It was evidenced that women taught by health professionals are more likely to have a greater frequency of conducting BSE than those taught by non-professionals (Champion, 1987).

A women's degree of interest in performing BSE and concern about breast cancer may also alter a women's perception regarding her environment. A cue to action is also an important stimulus that will trigger the health protective behavior of the women. The evidence suggests that age, education, marital status, professional breast examinations, BSE instruction, and family history of breast cancer can influence BSE behavior which varies with age and education (Holtzman & Clentano, 1983). Supportive environment for changing behavior includes social influence and personal experiences through conducting educational programs, which includes religious perspectives that may be helpful in managing the barriers to perform women's BSE practice (Han et al., 1996; Sangchan et al., 2008).

Breast cancer has become the most common form of cancer among women worldwide resulting in increased morbidity and mortality. With the hope of reducing breast cancer morbidity and mortality, secondary preventive measures have been promoted, including breast self-examination (BSE), a practice which has been widely recommended for women. The women who practice BSE are more likely to detect their own breast abnormalities. Numerous studies reported that the large percentage of breast cancer were first detected by women themselves, although mammography and clinical BSE is a more effective detection technique which are less frequent performed and sometimes not available.

There are many factors that are associated with women's performing BSE and among them; BSE self-efficacy is one of the strongest factor that was predicted by the researchers. One proposed approach of inducing BSE practice was Bandura's social cognitive theory which provides guidelines for helping women to achieve self-directed change by empowering knowledge, skills, and resources in order to control over their breast cancer seriousness. A relationship between BSE efficacy and BSE practice is needed to be identified because no study has been conducted among Bangladeshi women. Therefore, the researcher is interested in conducting the present study in order to explore nurse's knowledge and practice regarding BSE which may indirectly influence the patients' understanding and practice of conducting BSE.

CHAPTER 3

METHODOLOGY

This section covers all elements of research methods including research design, setting, population and sample, instrumentation, ethical consideration, data collection procedures, and data analysis.

Research Design

This descriptive correlational study design was aimed to determine the level of BSE efficacy, BSE practice among female staff nurses and to examine the relationship between BSE efficacy and BSE practice.

Setting

This study was conducted at Rangpur Medical College Hospital (RMCH) Bangladesh, which is a Government hospital. Rangpur is a big district of Rangpur division in northern Bangladesh. RMCH is a referral and teaching hospital for medical students and nursing students. There are 600 beds in RMCH and the total number of nurses is 310 which 37 of them are male, and 273 of them are female. The RMCH consists of 22 wards/units. There is one outdoor (Gynecology) facility to practice BSE for the nurses. There are two or three BSE-trained nurses providing care in this out-patient department under supervision of the gynecological residential surgeon. After the detection of any breast lumps or mass, they are referred to oncology outdoor. There is another opportunity for the nurses who work (only one)

in breast feeding outdoor unit to train BSE practice to the lactating mothers but very few nurses who work in these two areas know about BSE and teach BSE to the clients as well as practice BSE by themselves because there was no any other teachings or education program available for the nurses to practice BSE.

Population and Sample

The target population of this study was 273 female nurses who worked as staff nurses at Rangpur Medical College Hospital in Bangladesh during data collection period (November 2009 to January 2010).

Sample size estimation. Sample size was determined by a proportional estimation from the population, which the total number of nurses was about 273 in the hospital. A sample of 35% from the population size ranging from 100-900 was considered suitable for a descriptive study. Therefore, by taking 35% from the total 273 nurses, the sample size in this study was about 100 (Polit & Beck, 2008).

Sampling technique. The samples of this study were the nurses who met the following criteria; 1) aged between 20-65 years, 2) no history of mammography, 3) having no history/diagnosis of breast cancer, and 4) having clinical work experience.

The eligible nurses were selected by systematic random sampling method. This method was applied after taking the name list and health information regarding history of mammography and breast cancer of female staff nurses form nursing authority to meet the inclusion criteria. The sample selection started from the first name, and then every two interval names from the name list until the total sample reached one hundred.

Instrumentation

The instruments used to collect data were self-administering questionnaires consisted of 3 parts. Part I was the Demographic and Health Related Data Form, part II was the BSE Practice Questionnaire, and part III was the BSE Efficacy questionnaire (Appendix B).

Part I. *Demographic and Health Related Information Form*

This questionnaire was developed by the researcher. It was comprised of 12 questions related to demographic and health related information of the subject including age, marital status, religion, level of nurses' education, income, health problem, history of friend/ colleague's breast problem, history of menstrual cycle, breast cancer or family history of cancer and BSE information.

Part II. *BSE Practice Questionnaire*

The BSE practice questionnaire used in the study was modified from BSE practice questionnaire developed by Sainitzer (1990). The questionnaire was comprised of 21 questions of BSE practice that enquires about 1) the practice of BSE during the last one year, and 2) proficiency items related to the technique and thoroughness of BSE. The practice of BSE items consisted of 5 questions including BSE performing (item 1), frequency of BSE practice (item 2), and timing items of performing BSE (3-5). The BSE proficiency items consisted of 15 questions items (6-20). The response format was 'yes' or 'no' where, 'yes' indicated that the item had been practiced and 'no' indicated that the item had not been practiced.

Part III. BSE Efficacy Questionnaire

The BSE efficacy questionnaire was modified from the perceived competence at BSE level questionnaire which was developed by Sainitzer (1990) and from an extensive review of the literature on BSE efficacy. The questionnaire was comprised of two dimensions; Procedural efficacy and barrier management efficacy. Procedural efficacy is the competence at procedures of BSE consisting of fifteen items (1-15) and barrier management efficacy is the competence at BSE barriers management consisting of six items (16-21). This questionnaire uses 5-point Likert scale: 1 strongly disagree, 2 disagree, 3 not sure, 4 agree, 5 strongly agree. The possible mean score ranged from 1-5. The mean score interpretation was described using three levels; low, moderate, and high. This was obtained by dividing the mean score by 3. The scoring levels were categorized into: 1) low BSE efficacy, ranged from 1.00-2.33, 2) moderate BSE efficacy, ranged from 2.34-3.67, 3) high BSE efficacy, ranged from 3.68-5.00. Higher score was considered as higher level of BSE efficacy.

Translation of the Instruments

The instruments were translated using back-translation technique in this study (Sperder & Devllis, 1994). The instruments were translated from the original English version to a Bengali version by a Bangladeshi bilingual translator. Bengali version of the tools was then back translated into an English version. Finally, the two English versions were examined for comparability of language and similarity of interpretability by the thesis advisory committee.

Validity of the Instruments

The questionnaire was constructed in the Bengali language for data collection and was evaluated for content validity, language suitability, and criteria for scoring of the entire questionnaire by a panel of 3 experts, including two Thai breast cancer researchers, and one Bangladeshi nurse instructor; who were experts in cancer care. The content validity validated the degree to which the instruments had appropriate items to measure the nurses' BSE efficacy and BSE practice in Bangladesh.

Reliability of the Instruments

The instruments were examined for their reliability in 20 nurses after re-modifying according to the suggestion of the experts. The Cronbach's alpha coefficient was used to determine the internal consistent reliability of BSE efficacy questionnaire. Test-retest reliability was used to determine reliability of BSE practice questionnaire. It was tested at two different test periods. The second test was tested seven days after the first testby the same subjects. The percent agreement of two measures was 85%. The correlation coefficient was not possibly examined because the BSE practice measurement was a nominal and ordinal scale. The Cronbach's alpha coefficient of overall BSE efficacy, BSE procedural efficacy, and BSE barrier management efficacy were .86, .84, and .73, respectively.

Ethical Consideration

The Institutional Review Board (IRB) approval was obtained from the IRB committee of Faculty of nursing, Prince of Songkla University. Prior to participating in the study, all subjects received verbal and written explanation of the study. The researcher assured the subjects that their participations were voluntary. They were informed that they could withdraw from the study at any time. Confidentiality of their responses was maintained throughout the study. Only identification number was used on the questionnaire and the participant data file. Any reports of the study would be presented in aggregate form and for academic purpose only.

Data Collection

Data collection procedure was divided into two phases.

1. Preparation phase

1.1 Permission letter was obtained from the Dean, Faculty of Nursing, Prince of Songkla University to inform the director and nursing superintendent of Rangpur Medical College Hospital (RMCH).

1.2 The researcher informed the director of RMCH and nursing superintendent of RMCH about the research study and asked for permission to collect data from nurses at RMCH.

1.3 The researcher obtained a list of the nurses, and selected 100 subjects using random sampling who met the inclusion criteria.

2. Data collection phase

2.1 The researcher made an appointment with the subjects.

2.2 The researcher met the subjects, informed them about the study and human right protection and obtained a consent form from the subjects who were willing to participate in the study

2.3 The researcher distributed the self-reported questionnaire and mentioned of return date.

2.4 The researcher explained subjects about the questionnaire and asked them to complete the questionnaire.

2.5 The researcher collected the answered questionnaire and inspected all the questionnaires to ensure their completeness and correctness.

Data Analysis

Data was analyzed using descriptive statistic and inferential statistic for answering the questions as mentioned below.

1. Demographic and general information data were analyzed using frequencies, percentages, means, and standard deviation.

2. BSE efficacy was analyzed using mean and standard deviation

3. BSE practice and BSE proficiency were analyzed using frequency and percentage.

4. The relationship between BSE efficacy and BSE practice were analyzed using chi-square. Since more than 20% of the cells had the expected frequency of less than 5, the assumption of chi-square test was not met. Thus Fisher's Exact test was used and confirmed by the test of mean difference using independent t-test. The assumptions of t-test were also examined. The sample means were normally

distributed (skewness divided by std. error of skewness and kurtosis divided by std. error of kurtosis: ranges were less than 3) and all other assumptions; interval measurement of independent variable, equal variance in the two samples, were met.

CHAPTER 4

RESULTS AND DISCUSSION

This descriptive study was aimed to determine the level of BSE efficacy, the BSE practice, the BSE proficiency, and to examine the relationship between BSE efficacy and BSE practice of staff nurses. The sample was 100 nurses working in Rangpur Medical College Hospital, Bangladesh. Data were collected during November 2009 to January 2010 and were analyzed using descriptive statistics, Fisher's Exact test, and Independent t-test. In this chapter, the details of the study's results and a discussion of the findings are presented. Results are presented in five sections as follows.

Subjects' Characteristics

Breast-Self Examination (BSE) Efficacy

Breast-Self Examination (BSE) Practice

Proficiency of Breast-Self Examination (BSE) Practice

Relationship between Breast-Self Examination (BSE) Efficacy and Breast Self Examination (BSE) Practice.

Results

Subjects' characteristics

Samples comprised of 100 nurses with the mean age of 38.9 years (SD=4.89). Most of them were Muslim (89%) and married (97%). The majority had diploma degree (94%), had more than 6 years of working experience (95%) and did

not directly have working experience related to BSE (92%). Nearly all of the subjects (99%) had monthly income more than 10,000 (Taka) with the mean of 21973.62 Taka, (approximately 314 US $).

Considering of the data of health related information, most of the subjects (92%) had no experience in performing BSE. When asked whether they had friends or colleagues who have a history of breast cancer, the majority of them (93%) answered "yes," but most of them did not have family members being diagnosed of breast cancer (79%). Interestingly, 81% of the subjects indicated that they had never received any information regarding breast disease, breast cancer, and the BSE. For those who had received information (19%), the major source of information is from their associates, such as friends, physicians, medical assistants (57.9%) (Table2). For menstrual cycle, it was revealed that the majority had regular menstrual cycle (79%).

Table 2

Frequency and Percentage of Nurses by Demographic Characteristics and Health Related Information (N = 100)

Characteristics	n	(%)
Age (yrs) (M =38.9, SD = 4.89, Min-Max= 29-51)		
25- 39	67	67.0
40- 49	31	31.0
>50	2	2.0

Table 2 (continued)

Characteristics	n	(%)
Religion		
Islam	89	89.0
Hinduism	10	10.0
Buddhism	1	1.0
Marital status		
Single	2	2.0
Married	97	97.0
Widowed	1	1.0
Education		
Diploma	94	94.0
Bachelor	06	6.0
Working experience (yrs) (M= 14.47, SD = 5.629, Min-Max = 6-26,)		
2-6 years	5	5.0
> 6 years	95	95.0
No experience	92	92.0

Table 2 (continued)

Characteristics	n	(%)
Experience on specific area		
No experience	92	92.0
BSE campaign	3	3.0
Breast cancer patient	2	2.0
Oncology department	3	2.0
Income (Tk./Month) (M=21973.62, SD =34,828.40, Min-Max= 9,992- 2,20,000)		
8,001-10,000	1	1.0
>10,000	99	99.0
Friend/colleague history of breast cancer		
No	7	7.0
Yes	93	93.0
Family history of breast cancer		
No	79	79.0
Yes	21	21.0
Sister (first degree relatives)	6	28.5
Relatives (others)	15	71.5

Table 2 (continued)

Characteristics	n	(%)
Breast-self examination information		
No	81	81.0
Yes	19	19.0
Television	3	15.8
Pamphlet	5	26.3
Others (friends, physicians, medical assistants)	11	57.9
Menstrual history		
Regular	79	79.0
Spotting	8	8.0
Irregular	9	9.0
Menopause	3	3.0
Pregnant	1	1.0

Breast Self-Examination (BSE) Efficacy

Table 3 represents the BSE efficacy of the nurses. The overall BSE efficacy mean score of the subjects was at a moderate level (M = 03.19, SD = 0.33). For the subscales of the BSE efficacy, the mean procedural efficacy score (M = 3.30, SD = 0.35) and BSE barrier management efficacy score were also at a moderate level (M =2.93, SD=0.41).

Table 3

Minimum-Maximum, Scores, Mean, Standard Deviation, Level of BSE Efficacy of Nurses Classified by Its Subscales and Overall BSE Efficacy (N= 100)

Variable	Min-Max	Mean	SD	level of BSE efficacy
Overall BSE efficacy	3-5	3.19	0.33	Moderate
BSE procedural efficacy	3-5	3.30	0.35	Moderate
BSE barrier management efficacy	2-4	2.93	0.41	Moderate

Breast Self-Examination (BSE) Practice

There were a small number of nurses in this study who practiced BSE (15%) while the majority (85%) did not. The reasons of not performing BSE were 'do not know how to do' (64.7%), 'never heard about BSE' (24.7%), and 'unnecessary to do' (7.1%). Only few subjects indicated that they did not have time and felt embarrassed to perform BSE. None of them indicated "fear of finding lump' as one of the reasons. For those who performed, more than half (53.3%) did it every six months (Table 4).

Table 4

Frequency and Percentage of Nurses Performing BSE Practice and Reasons for Not Performing BSE Practice (N=100)

Variable	n	%
BSE practice		
Performed	15	15.0
Not performed*	85	85.0

Table 4 (continued)

Variable	n	%
Never heard about BSE	21	24.7
Embarrassed to do BSE	1	1.1
Do not know how to do	55	64.7
Do not have time	2	2.4
Unnecessary to do	6	7.1
Frequency of BSE performing (n =15)		
Every month	2	13.3
Every three months	4	26.7
Every six months	8	53.3

*One subject could be providing more than one answers

Proficiency of Breast Self-Examination (BSE) Practice

The subjects were asked whether they performed BSE correctly to indicate their proficiency. It was revealed that for each procedure of BSE, only 6 to 14 out of 15 subjects had performed it correctly. The highest number of subjects (n = 14, 93.3 %) correctly performed the following procedures in examining breasts: 'palpating of the right and left breasts' and 'palpating over the area of outer quadrant'. The lowest number of subjects (n = 6, 40 %) correctly performed the followings breast examining procedures: 'looking for a change in shape', 'looking for a change of skin', 'looking for nipple discharge', ' using pad of finger', 'palpating the entire breast', and 'palpate by light, medium, and deep pressure' (Table 5).

Table 5

Frequency and Percentage of Nurses by BSE Proficiency (n =15)

BSE Proficiency	Yes		No	
	n	%	n	%
Looking in a mirror	13	86.7	2	13.3
Looking in a symmetry	12	800.	3	20.0
Looking for size	11	73.3	4	26.7
Looking for shape	6	40.0	9	60.0
Looking for skin change	6	40.0	9	60.0
Looking for lesion	8	53.3	7	46.7
Looking for nipple discharge	6	40.0	9	60.0
Palpating by lying down	8	53.3	7	46.7
Palpating by using pad of finger	6	40.0	9	60.0
Palpating by using contra-lateral hand	8	53.3	7	46.7
Palpating of right and left breasts	14	93.3	1	6.7
Palpating entire breast	6	40.0	9	60.0
Palpating by area of outer quadrant	14	93.3	1	6.7
Palpating between armpit and breasts	13	86.7	2	13.3
Palpating by light, medium, and deep pressure	6	40.0	9	60.0

The relationships between BSE efficacy, its subscales and BSE practice were analyzed. The findings showed that there were significant relationships between BSE

efficacy, BSE practice**,** and BSE efficacy subscale: BSE procedural efficacy, barrier management efficacy, and BSE practice ($p < .01$) (Table 6). These findings were confirmed with results of the test which showed that for those who performed BSE, they had significantly higher mean score of total efficacy, practice efficacy, and barrier management efficacy than those who did not perform BSE ($p < .01$) (Table 7).

Table 6

Relationships Between BSE Efficacy and Its Subscales and BSE Practice (N =100)

BSE Efficacy	BSE Practice				p-value*
	Performed (n=15)		Not performed (n=85)		
	n	%	n	%	
BSE procedural efficacy					
Moderate	2	13.3	85	97.7	.000
High	13	86.7	-	2.3	
BSE barrier management					
Low	-	-	9	10.45	.000
Moderate	11	73.3	75	88.24	
High	4	26.7	1	1.41	
Overall BSE efficacy					
Moderate	5	33.3	75	88.24	.000
High	10	66.7	10	11.76	

*Fisher's Exact Test

Table 7

Mean Score of Total BSE Efficacy, Procedural Efficacy, and Barrier Management Efficacy Between Subjects Who Performed BSE and Those Who Did Not Perform (N = 100)

BSE Efficacy	BSE Practice				t	p-value
	Performed BSE (n=15)		Not Performed BSE (n=85)			
	M	SD	M	SD		
Procedural efficacy	3.95	0.33	3.18	0.19	8.80	.000
Barrier management	3.50	0.83	2.82	0.32	7.26	.000
Total BSE efficacy	3.82	0.31	3.38	0.16	9.05	.000

Discussion

Sample characteristics. The age of subjects ranged from 29-51 years with a mean age of 38.9 years (SD=4.89). The majority of the subjects were aged between 29-39 years, Muslim (89%), and married (97%) which is consistent with the distribution of Muslims around Bangladesh. Most subjects (94%) graduated with diploma degree in nursing which is the basic education for nurses in Bangladesh. Currently, there is no Nursing college or university in Rangpur district and there is only one Government nursing college in Bangladesh located in the capital city. Nearly all (99%) of the subjects had monthly income from 9,992- 22, 0000 Taka with

the average monthly income of 21,973.62 (equal to about 314 US $) Taka which were not sufficient for maintaining standard life status of the subjects.

Considering health related data, very few of the subjects indicated that they had experience on clinical work regarding BSE campaign (3%), breast cancer patient (2%), or oncology department (3%) which may be one of the important reasons of less number of nurses performing BSE practice. Previous studies found that work experience is one of the major factors that can influence knowledge and practice of performing BSE. Fifty-two percent of the subjects had performed BSE and approximately 30% of them reported that they had learned the practice and knowledge regarding BSE during their work experience. The significant relationship was found between higher levels of work experience and BSE practice (Han, et al., 1996; Salem, & Hassan, 2007).

Ninety-three percent of the subjects reported that their friends/colleagues have been diagnosed with breast cancer. Only one or two breast cancer patients were found in large number of friends as informed by the colleagues of the same hospital. The majority (79%) of subjects reported that their family members or relatives have no history of breast cancer which may be one of the important reason for having a very few number of subjects who practiced BSE. Findings from previous studies indicated that women with a maternal or family history of breast cancer, especially a first-degree relative (mother, sister, or daughter), practiced BSE more frequently than those without family members history of having breast cancer (ACS, 2008; Takakuwa et al., 2000). A few numbers (19%) of subjects in this study had reported that they had received information on BSE/ breast disease/ breast cancer. For those who had

received information, the major source of information came from their friends, physicians, medical assistant (57.9%), which indicated that breast cancer and BSE practice information may be another influencing factor in performing BSE. Previous studies supported that health information is efficiently suggested in performing BSE practice (Yan, 2009).

BSE efficacy. This study provides the first evidence regarding the practice of breast self-examination among nurses in Bangladesh. Factors that may contribute to the study findings will be discussed to highlight the country context in relation to other previous studies in other countries.

Bangladeshi nurses participated in this study reported a moderate level of the BSE efficacy in which the procedural efficacy was moderate, only 15% of them had performed the BSE practice. Among those who performed, about half of them did every six months. These findings are not surprising and are consistent with previous studies. Kim, lee, Ahn, and Chung (2003) conducted a study with 258 Korean nurses, they found that nurses had a moderate level of self-efficacy and only 26% of the nurses performed BSE at least once during the last 6 months. Not only female nurses, another study conducted in Norway with female physician (Rosvold, Hjartaker, Bjertness, & Lund, 2001) and found that only 30.6% of the female physicians performed monthly BSE. Furthermore, a mixed group of female workers (physician, nurses, and midwifes) was studied in Turkey (Canbulata & Uzun, 2008) and found that only 21.9% of the female health workers performed BSE regularly of which female physician's perceived higher self-efficacy in performing BSE than nurses and midwives. Several factors may contribute to the findings in this study including

working experience on breast cancer or BSE area, breast cancer and BSE information, professional education, and lack of BSE knowledge and skill.

Lack of work experience regarding the breast cancer or BSE area may be one of the important influencing factors indicated in this study. Majority (92%) of nurses reported that they had no experience in that area. The significant relationship was found between higher levels of work experience and BSE practice (Han et al., 1996). In addition, Salem and Hassan (2007) found that the nurses who performed BSE, approximately 60% of them performed and gained knowledge and skill during their work experience. This finding might be consistent with the major source of self-efficacy of Bandura (1997) who reported that self-efficacy beliefs can enhance human accomplishment and influence the choice and the course of action they pursue. They tend to select task or activities in which they feel competent and confident and avoid those in which they do not.

To promote self-efficacy in BSE practice, an information source is one of the effective ways. The study indicated that Breast cancer and BSE information may be another factor that influence BSE efficacy of nurses in this study. Moderate level of BSE efficacy of the nurses was found among those who obtained the breast cancer and BSE information from television, pamphlet, and other sources (friends, physicians, and medical assistants) in the BSE-performing group. Having a work experience with breast cancer patients, BSE campaigns, and oncology department might also have an influence on BSE efficacy. This factor may support the sources of self-efficacy that through vicarious experience of observing others perform tasks; vicarious experience is particularly powerful when observers see similarities in some

characteristic and then assume that the model's performance is an indicator of their own capability. When people are uncertain about their own abilities or when they have limited prior experience, they become more sensitive to it. The effects of modeling are particularly relevant in this context (Bandura, 2001). A previous study found that the subjects who have got breast cancer, BSE information and training were more likely to practice BSE regularly (Tavafian et al., 2009).

Education was another major identified factor that might influence the level of BSE efficacy in this study. The subjects were mostly educated at diploma level (94%). Previous studies proved that higher level of professional education could provide high level of performance in BSE. Significant relationship was found between higher levels in nursing college and BSE practice. Subjects reported that they had learned about breast cancer and obtained BSE information in their college curricula (Alsaif, 2004).

More than half (64.7%) of the nurses who did not perform BSE reported that they did not know how to do BSE, and 24.7% reported that they had never heard about BSE, which indicated that knowledge about BSE was found to be the most deficient among staff nurses. Results from a previous study showed that a ratio of knowledge of breast cancer and practice of BSE is significantly associated with BSE frequency and proficiency (Ozturk et al. 1998). It means that the greater knowledge of BSE nurses have, the higher rate for nurses to practice BSE will be. The findings of another research study showed that samples who had a lack of knowledge about BSE and inadequate practice, had low self-efficacy **(**Puttahraksa, 2009**).**

The correctness of technique and thoroughness of BSE performance was only 6-14% among the subjects. This indicated a lack of skills in the performance of BSE which may be associated with limited BSE activities. Successful performance absolutely requires both skills and beliefs in personal efficacy. It also requires the association of cognitive, social, and behavioral skills incorporated into courses of proceedings that can provide higher level of practice (Bandura, 1997). "Mastery experience" is the most important factor identifying a person's self-efficacy which simply means that previous successes can raise self-efficacy, whereas failures lower it. Bandura advised that enactive experience is a highly influential source of efficacy information. Successful experiences raise self-efficacy with regard to the target performance (Bandura, as cited in Anderson, 2000).

BSE practice. Only 15% of the subjects had performed the BSE practice. Among those who performed, about half of them did every six months. More than half of the subjects (64.7%) ‘do not know how to do’ and ‘never heard about BSE (24.7%). Only 13.3% of subjects performed BSE every month as recommended by American Cancer Society (ACS, 2007). Previous studies supported that although the higher percentage (75-95%) of women heard about BSE, very few of them (15-40%) had performed BSE (Anderson 2000; Champion, 1987; 1988; 1992; Sangchan, et al., 2008). The very low percentage of BSE practice may be due to several contributing factors including religion and marital status, information about breast cancer and BSE practice, family history of breast cancer, lack of awareness, and perceived barriers.

Religion and marital status may be the important identified factors in this study. Most of the subjects were Muslim (98%) and married (97%). Culturally,

Bangladeshi Muslim women should keep their modesty; they should not expose and touch their bodies by themselves or by others. They have to depend on their husband's opinion for taking any kind of urgent decisions as a family leader. However, their husbands are not so interested in doing BSE for their wives as mentioned by Bangladeshi writer Salim (2007). Previous study also supported that although health promotion and disease prevention are highlighted and encouraged in the Holy Qu'ran and the Prophet Mohammed's (SAW) teaching, some Islamic teaching may create hindrance in performing BSE among Muslim women, especially those Islamic views related to female modesty (Bottorff et al.; Underwood, Shaikha, & Bakr, as cited in Sangchan, et al., 2008).

There were 81% subjects who reported that they had never received information about BSE which was the most influencing factor for less performing of BSE in this study. To increase BSE practice by promoting self-efficacy, an information source is one of the effective ways. In this study, the high percentage of BSE practice (14 out of 15) was found among subjects who has history of family member's breast cancer and who has got breast cancer and BSE information from television, pamphlet, and other sources (friends, physicians, and medical assistants). Similar results have been found in previous studies, those subjects who have history of family member's breast cancer, BSE information and training are more likely to practice BSE (Tavafian et. al., 2009).

The result showed that most of the subjects had negative history of family member's breast cancer, and it may be another important determining factor for less number of BSE practice (79%). There is a positive history of having breast cancer of

first degree relatives (sister) only 28.5%. Previous studies showed that women with a maternal or family history of breast cancer, especially first degree relatives or having friends with history of breast cancer, are likely to practice BSE more frequently (Han, et al., 1996; Takakuwa et al., 2000).

Majority of the subject had negative history of having family member's breast cancer. This may influence them to be less aware of breast cancer, consequently less likely to practice BSE. Lack of awareness of hospital policy makers and conducting no research study may be another important identified factor for this low percentage of BSE. This result may be consistent with the previous studies that there was a significant relationship between lack of awareness about breast cancer and BSE practice (Han et al. 2009).

Lastly, the subject's perceived barriers such as less opportunity to learn about breast cancer and BSE in work environment, insufficient training program, low BSE campaign facilities, and low level of education and knowledge might influence the BSE practice. Studies by Champion (1987, 1992) showed that subjects who had fewer barriers and could overcome of those barriers were more likely to perform BSE.

BSE Proficiency. Most of subjects who performed BSE (93.3%) covered only two out of 15 items of BSE proficiency and only 40% of them covered 6 items. The majority items (6 items) were performed by 6 (40%) subjects, which indicated that the BSE proficiency was low in number in maintaining correct procedure and technique which might influence BSE practice. The results supported that the subjects with low level of BSE practice is less likely to perform BSE proficiency. BSE is an

efficient practice when it is performed correctly, several studies found that after implementation of training program, the women's proficiency was increased which influenced BSE practice effectively (Mamon & Zapka, 1985; Seif & Aziz, 2000).

The results indicated that nurses do not have enough knowledge of breast cancer and knowledge of BSE technique which may influence practicing BSE regularly and correctly. Although the subjects in this study were professional nurses, their practice of BSE was very low in number. This indicates the need of initiating BSE educational program which is inexpensive, non-invasive, involves little time and physical energy, simple and dose not depend on professional help. However, the effectiveness of BSE is controversial as it is argued that significant number of women find lumps when they are bathing or dressing, and by doing BSE once a month may contribute to a women's heightened awareness of what is normal of her (Alsaif, 2004).

Relationship between BSE efficacy and BSE practice. The relationship between overall BSE efficacy and BSE practice was found. Overall BSE efficacy mean score was significantly higher in BSE-performing group than in BSE-not-performing group (table 7). The results in this study might contribute to the Bandura's social cognitive theory as he mentioned that the higher level of individual's efficacy could increase the higher level of practice (Bandura, 1997). Individually, the subjects might be more confident in BSE-performing group in comparing to the subjects that are not performing. The greater confidence in performing BSE was shown to have strong relationship with BSE practice.

The BSE procedural efficacy was also higher in BSE-performing group (M = 3.95, level = high) comparing with the BSE-not-performing group (M = 3.18, level = moderate), probably because the subjects were more knowledgeable and confident to maintain BSE procedure in BSE-performing group than in BSE-not-performing group. The study was assessed by asking the questions like "How confidently the subjects could perform each step of BSE procedure during the past one year.". Most of the subjects who performed BSE were at a moderate level of BSE procedural efficacy (M=3.30), meaning that the subjects with higher procedural efficacy were more likely to practice BSE. Self- efficacy theory suggests that an increased level of self-efficacy leads to an increase in the level of BSE practice.

Similarly, the BSE barrier management efficacy was also higher in those subjects who performed BSE. Their strength of managing barriers might be increased during their practice. Previously achieved success increases the perceived self-efficacy, motivates one to attempt for more difficult action and encourages generalizing to other situation (Sainitzer, 1990). Self-efficacy theory suggests that the most important predictor of BSE practice is the individual's own confidence in performing BSE behavior. The subjects were asked how skillfully they could manage or overcome their barriers in terms of performing BSE in this study. Mostly moderate level BSE efficacy (M=2.93) was found in this variable. This result indicates that nurses who performed BSE had higher level of barrier management ability than those who did not performed BSE. This finding was consistent with the previous studies of the Health Belief Model (HBM) variables. The women who have ability to overcome their fewer barriers were more likely to perform BSE (Champion, 1987; 1992).

CHAPTER 5

CONCLUSION AND RECOMMENDATION

This descriptive study was designed to determine the level of BSE efficacy, BSE practice, proficiency in BSE technique, and the relationships between them. The investigation, exploratory study using descriptive design, accessed 100 staff nurses by using a systematic random sampling from 273 female nurses at clinical worksite in Rangpur Medical College Hospital, Bangladesh. Data were collected from November 2009 to January 2010.The researcher developed the questionnaires based on self-efficacy concept of the Social Cognitive Theory and related literature review. The questionnaires consisted of three parts, which were demographic and health related data, BSE efficacy, and BSE practice questionnaire. Data were analyzed using descriptive, Fisher's Exact Test, and Independent t-test.

Summary of the Study Results

The subjects' BSE efficacy levels in this study were at moderate level. A very low number of nurses (subject) had performed BSE during the past one year. Their BSE practice proficiencies were also little in number, covering all items of thoroughness and correctness. An association was found between BSE efficacy and BSE practice among subjects in this study. BSE efficacy score was higher among subjects who practiced BSE than those who did not.

Implications for Nursing

Nursing practice. A low number of BSE practice was found among subjects in this study. There was a significant association between BSE efficacy and BSE practice among nurses. Therefore, the following practices could be implemented among nurses in Rangpur medical college hospital:

1. Nurses should be educated to learn about BSE. The educational program offered to nurses must be designed to increase their BSE self-efficacy. The program must also include teaching methods that allow nurses to learn and practice BSE effectively to increase BSE proficiency and then they can teach others to do it.

2. Nurses who wish to be trained should verify themselves whether they could practice and further educate their female clients.

3. As it was found that learning from other colleagues was the major source for BSE practice, the organizer should initiate activities encouraging hospital personnel to discuss and learn among them.

Nursing research. In nursing research field the following study could be implemented.

1. A replication study should be conducted by increasing the sample size of the nurses and/or in other healthy women group.

2. Using this research database to develop intervention research is recommended. For example, the effectiveness of teaching and educational program methods to improve BSE efficacy, and culturally appropriate model of promoting BSE practice.

Nursing education.

1. This study can be offer a database for creating an educational program related to breast cancer and BSE practice for nurses in order to effectively promote BSE efficacy as well as proficiency of BSE in Rangpur Medical College Hospital.

2. A nursing intervention model focusing on a breast health teaching program, and updated BSE knowledge that intensively fosters BSE skills for women in this group is suggested.

Strength of the Study

There was no previous study among nurses regarding BSE in Bangladesh, so this study could be utilized as a pioneer in conducting further study.

Limitations of the Study

The limitation could be observed as follows:

1. Since the sample of this study was the nurses, findings could be generalized only the other nurses of governmental hospitals, but not in the general women in Bangladesh.

2. Small sample size and short period of data collection may also limit the generalizability.

3. Data collection was conducted on working period of the subjects thus they were busy and sometimes were less attentive.

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APPENDICES

APPENDIX A

INFORMED CONSENT FORM

Dear Participants,

I am Amina Khatun a graduate student of the International Master's program, Faculty of Nursing, Prince of Songkla University (PSU), Thailand. I am conducting a research project for thesis in partial fulfillment of Master's degree in Nursing. This survey is being conducted at Rangpur Medical College Hospital Rangpur, communications and cooperation with the University of Prince of Songkla in order to learn more about women's health beliefs regarding the practice of breast self-examination (BSE).

The purpose of this questionnaire is to give you an opportunity to express your knowledge about the practice of BSE, the level of perceived self-competence in BSE practice to ensure the relationship between BSE efficacy and practice among you that will be useful to further identify methods to increase your BSE efficacy and practice.

To participate in this study involves filling in the attached questionnaires that will take about twenty minutes to complete. Confidentiality will be maintained at all times. There are no identifiers on the forms or the envelopes. Your answers will be strictly confidential and cannot be traced back to you. Only the investigator and her professor research advisor will have access to the data. The data will be kept for no more than three years and then destroyed.

Your participation in this study is completely voluntary and you may withdraw from the study at any time you choose to do so. There is no lesser risk in participating in this study and does not affect your employment status in any way. I can be reached at the telephone number and will be happy to answer any questions you might have pertaining to this study.

Thank you for your consideration to participate in this research study.

…… ……. …….

(Name of Researcher) (Signature of Researcher) Date:

If you have any question regarding to these questionnaire any time during this study, please feel free to ask or discuss with me. Please contact me at the following address.

Tel. No: 62719

Mobile No: 01818462885

E-mail: akhatun@ymail.com

I have already read and understood all information and agree to participate in this study.

……..

(Signature of participant)

Date ……..

APPENDIX B

INSTRUMENTS

Relationship Between Breast Self-examination Efficacy and Breast Self-examination Practices

For Researcher

Question number…….

This questionnaire consists of 3 parts

Part I. Demographic and Health Related Questionnaire

Part II. The BSE Practice Questionnaire

Part III: BSE Efficacy Questionnaire

Part I: Demographic and Health Related Questionnaire

Instruction: Please select your correct answer and put (√) mark on the blank space with remembering the following instructions.

- There is no right or wrong answer. I am interested in your opinion
- Please you mark in the single number, not more than one.
- Please answer all the question items
- Please answer each question honestly

1. Age: …….years
2. Religion
   - ☐ 1. Muslim
   - ☐ 2. Hindu
   - ☐ 3. Buddhist
   - ☐ 4. Christian

3. Marital status

- ☐ 1. Single
- ☐ 2. Married
- ☐ 3. Widow / Divorce/ separated
- ☐ 4. Other (please specify)……..

4. Education

- ☐ 1. Diploma & midwifery
- ☐ 2. Bachelor degree
- ☐ 3. Master degree

5. Working experience……..years

6. Working experience on specific area regarding

- ☐ 1. BSE campaign
- ☐ 2. Breast cancer
- ☐ 3. Oncology department
- ☐ 4. Others, please specify ……

7. Income per month…….. Taka

8. Do your friends or colleague have breast cancer?

- ☐ 1. No
- ☐ 2. Yes, please specify…….

9. Do your family members/relatives have breast cancer?

- ☐ 1. No
- ☐ 2. Yes, please specify……..

10. Have you ever received any information about breast disease / breast cancer / breast self-examination?

- ☐ 1. No
- ☐ 2. Yes, please specify……

11. Source of information receive

☐ 1. Television

☐ 2. Pamphlet

☐ 3. Other, please specify…….

12. Menstrual history

☐ 1. Regular menstruation

☐ 2. Irregular menstruation

☐ 3. Menopausal

☐ 4. Others, please specify……

Part II. The BSE Practice Questionnaire

Instruction: This questionnaire asks about your BSE practice. Please respond to each item as accurately as possible by circling the number that corresponds with your answer.

BSE practice questions

1. Have you ever performed BSE?

I. No, because-------circle one that apply to you, you can circle more than one

a. Never heard about BSE

b. Embarrassing to do

c. Do not know how to do BSE

d. Fear of finding lump

e. Do not have time

f. Forget to do

g. Unnecessary to do BSE

h. Other reasons, please specify……

II. Yes, please answer the following questions and go to part III of questionnaires

2. How often have you performed BSE?

a. Oftenly /everyday/every month

b. Every 2-3 months

c. Sometimes/every 5-6 months

d. Every year

e. Other, please specify …….

3. If you have menstruation, when do you perform BSE in each month?

a. The first day after menstruation period

b. One week after menstruation period

c. Other (please specify……

4. If you are post-menopausal, when do you perform BSE in each month?

a. Convenient day/ whenever

b. The first day of month

c. The same day of each month

d. Other (please

5. What position do you usually follow when doing BSE? (You can answer more than one).

a. Looking in front of mirror

b. Palpation while lying down

c. Palpation while taking shower

d. Other (please specify)……

BSE Proficiency Questions

These are not right or wrong answers. Please answer to what you have actually practiced during the past year.

6. When doing BSE, did you examine your breasts, looking in a mirror?

   a. Yes

   b. No

7. When doing BSE, did you examine your breasts looking for symmetry?

   a. Yes

   b. No

8. When doing BSE, did you examine your breasts looking for size?

   a. Yes

   b. No

9. When doing BSE, did you examine your breasts looking for shape?

   a. Yes

   b. No

10. When doing BSE, did you examine your breasts looking for skin changes?

   a. Yes

   b. No

11. When doing BSE, did you examine your breasts looking for lesion?

   a. Yes

   b. No

12. When doing BSE, did you examine at your breasts for discharge from the nipple?

   a. Yes

   b. No

13. When doing BSE, did you palpate your breasts while lying down?

a. Yes

b. No

14. When doing BSE, did you palpate your breasts by using pad of fingers?

a. Yes

b. No

15. When doing BSE, did you palpate your breasts by using contra-lateral hand?

a. Yes

b. No

16. When doing BSE, did you palpate your breasts area both right and left breast?

a. Yes

b. No

17. When doing BSE, did you palpate your breasts area of entire breast?

a. Yes

b. No

18. When doing BSE, did you palpate your breasts area in outer quadrant?

a. Yes

b. No

19. When doing BSE, did you palpate your breasts between armpit and breasts?

a. Yes

b. No

20. When doing BSE, did you palpate your breasts with light, medium, and deep pressure?

a. Yes

b. No

Part III: BSE Efficacy Questionnaire

Instruction: This questionnaire asks about your confidence towards BSE procedure and barrier management. Please rate all items by choosing only one for each item that will indicate how confident or sure you are in doing BSE. In marking the questionnaire, please remember the following

Strongly disagree (1)- meaning that you are strongly disagree with that item.

Disagree (2) - meaning that you are disagree with this item.

Not sure (3) - meaning that you are neither agree nor disagree with this item.

Agree (4) - meaning that you are agree with this item.

Strongly agree (5) - meaning that you are strongly agree with this item.

BSE efficacy items	1	2	3	4	5
BSE procedural efficacy: 1. I am confident to look visually at my breasts and see unusual or other than normal things about them	1	2	3	4	5
2. I am able to notice when my breasts look differently than they usually do.	1	2	3	4	5
3. I am confident to use the correct part of my fingers when examining my breast tissue.	1	2	3	4	5
4. I am confidant to use the pads of my fingers to check my breasts for changes since the last time I checked them.	1	2	3	4	5

BSE efficacy items	1	2	3	4	5
5. I am confident to use the first third part of my fingers to feel my breasts for lumps or masses	1	2	3	4	5
6. I am confident to use to check all the breast tissue that needs to be checked on each breast.	1	2	3	4	5
7. I am confident to figure out the normal tissue for me on my own breast.	1	2	3	4	5
8. I am confident to know what my breast tissue is supposed to feel like when it is healthy.	1	2	3	4	5
9. I am confident to identify my healthy breast tissue.	1	2	3	4	5
10. I am confident to identify lumps or masses that need to be reported to my physician.	1	2	3	4	5
11. I am confident to decide what abnormal breast tissue is when I check my breast.	1	2	3	4	5
12. I am confident to report any changes in my breasts I think my physician should know about it.	1	2	3	4	5
13. I am confident to tell my physician about concerns I have after checking my breasts.	1	2	3	4	5
14. I am confident to convince my physician when I have found a breast lump or bump that I concern.	1	2	3	4	5
15. I am confident to know what I would do if I felt a lump while doing BSE.	1	2	3	4	5

BSE efficacy items	1	2	3	4	5
BSE barriers management efficacy: 16. I am able to perform breast self-examination because I can manage my available time to practice.	1	2	3	4	5
17. I am able to perform breast self-examination because I have private place to do.	1	2	3	4	5
18. I am able to perform breast self-examination because I do not feel afraid of getting lump or abnormality.	1	2	3	4	5
19. I am able to perform BSE because I do not feel embarrass to practice.	1	2	3	4	5
20. I am able to do breast self-examination because I do not feel any pain whenever I practice.	1	2	3	4	5
21. I am able to do breast self-examination because I can maintain its regularity.	1	2	3	4	5

APPENDIX C

ADDITIONAL ANALYSIS

Table 8

Frequency and Percentage of Nurse's Sub-Aspects of BSE Practice (N=100)

Item of BSE Practice	n	(%)
Performed BSE	15	15
Not performed Because	85	85
never heard about BSE	64	75.3
embarrassing to do BSE	21	24
do not know how to do BSE	55	64
fear of finding lump	-	-
do not have time	2	2.4
unnecessary to do BSE	6	
Performed BSE who got BSE information (n = 15)	14	93.3
Performed BSE who did not get BSE information (n = 85)	5	5.9
Performed BSE		
every month	2	13.3
every 2-3 months	4	26.7
sometimes/every 5-6 months	8	53.3
every year	1	6.7
Perform BSE when having menstruation cycle		
the first day after menstruation period		
the last day of menstruation period	6	6.0
one week after menstruation period	2	2.0
others (whenever)	5	5.0
Perform BSE when having menopausal		
convenient day/ whenever		
the first day of month	1	1.0

Table 8 (Continued)

Item of BSE practice	n	(%)
the same day of each month	1	1.0
others		
What position do you usually follow when doing BSE		
looking in front of mirror	2	2.0
palpation while lying down	4	4.0
palpation while taking shower	7	7.0
other (whenever)	2	2.0

Table 9

Frequency and Percentage of Nurses by BSE Efficacy Items (N = 100)

BSE Efficacy Items	Strongly disagree n (%)	disagree n (%)	Not sure n (%)	Agree n (%)	Strongly agree n (%)
BSE procedural efficacy:					
I am confident to look visually at my breasts and see unusual or other than normal things about them.	52 (52.0)	13 (13.0)	-	34 (34.0)	1 (1.0)
I am able to notice when my breasts look differently than they usually do.	-	13 (13.0)	2(2.0)	83(83.0)	2 (2.0)

Table 9 (Continued)

BSE Efficacy Items	Strongly disagree n (%)	disagree n (%)	Not sure n (%)	Agree n (%)	Strongly agree n (%)
I am confident to use the correct part of my fingers when examining my breast tissue.	13(13.0)	80(80.0)	2 (2.0)	5(5.0)	
I am confidant to use the pads of my fingers to check my breasts for changes since the last time I checked them.	-	13(13.0)	7(7.0)	76 (76.0)	4 (4.0)
I am confident to use the first third part of my fingers to feel my breasts for lumps or masses.	12 (12.0)	77 (77.0)	3 (3.0)	7(7.0)	1 (1.0)
I am confident to use to check all the breast tissue that needs to be checked on each breast.	6 (6.0)	77 (77.0)		14 (14.0)	3 (3.0)
I am confident to figure out the normal tissue for me on my own breast.	-	12(12.0)	4 (4.0)	83 (83.0)	1(1.0)

Table 9(Continued)

BSE Efficacy Items	Strongly disagree n (%)	disagree n (%)	Not sure n (%)	Agree n (%)	Strongly agree n (%)
I am confident to know what my breast tissue is supposed to feel like when it is healthy.	-	17 (17.7)	1 (1.0)	80 (80.0)	2 (2.0)
I am confident to identify my healthy breast tissue.	-	20 (20.0)	8 (8.0)	63 (63.0)	9 (9.0)
I am confident to identify lumps or masses that need to be reported to my physician.	-	23 (23.0)	10 (10.0)	61 (61.0)	6 (6.0)
I am confident to decide what abnormal breast tissue is when I check my breast.	-	30 (30.0)	5 (5.0)	64(64.0)	1 (1.0)
I am confident to report any changes in my breasts I think my physician should know about it.	-	10 (10.0)	3 (3.0)	85 (85.0)	2 (2.0)
I am confident to tell my physician about concerns I have after checking my breasts.	-	62 (62.0)	10 (10.0)	22 (22.0)	6 (6.0)

Table 9 (Continued)

BSE Efficacy Items	Strongly disagree n (%)	disagree n (%)	Not sure n (%)	Agree n (%)	Strongly agree n (%)
I am confident to convince my physician when I have found a breast lump or bump that I concern.	-	7 (7.0)	2 (2.0)	79 (79.0)	12(12.0)
I am confident to know what I would do if I felt a lump while doing BSE.	-	4 (4.0)	1 (1.0)	44 (44.0)	51(51.0)
BSE barriers management efficacy: I am able to perform breast self-examination because I can manage my available time to practice.	16 (16.0)	67(67.0)	1 (1.0)	11 (11.0)	4 (4.0)
I am able to perform BSE because I have private place to do.	-	-	1(1.0)	55(55.0)	44(44.0)
I am able to perform breast self-examination because I do not feel afraid of getting lump or abnormality.	15 (15.0)	76(76.0)	1(1.0)	7(7.0)	1(1.0)

Table 9 (Continued)

BSE Efficacy Items	Strongly disagree n (%)	disagree n (%)	Not sure n (%)	Agree n (%)	Strongly agree n (%)
I am able to perform BSE because I do not feel embarrass to practice.	-	42(42.0)	3(3.0)	50(50.00	5 (5.0)
I am able to do breast self-examination because I do not feel any pain whenever I practice.	-	5(5.0)	8(8.0)	74(74.0)	13(13.0)
I am able to do breast self-examination because I can maintain its regularity.	29 (29.0)	68(68.0)	1(1.0)	-	2(2.0)

APPENDIX D

LIST OF EXPERTS

For fitting the conceptual definition and method of measurement, the content validity of the instruments was determined by three experts including:

1. Hathairat Sangchan, Assistant Professor, PhD. RN.
   Faculty of Nursing, Prince of Songkla University.
2. Sopen Chunuan, Assistant Professor, PhD. RN.
   Faculty of Nursing, Prince of Songkla University.
3. Saleha Khatun, Nursing Instructor, RN. College of Nursing, Mohakhali, Dhaka, Bangladesh.

VITAE

Name Mrs. Amina Khatun

Student ID 5110420080

Educational Attainment

Degree	Name of Institution	Year of Graduation
Diploma in Nursing	Nursing Institute, Rangpur	1989
Diploma in Midwifery	Nursing Institute, Rangpur	1990
Bachelor in Nursing Science	College of Nursing, University of Dhaka	2000
Master in Nursing	Prince of Songkla University	2010

Scholarship Awards during Enrolment

Scholarship for the master degree in the Faculty of Nursing Prince of Songkla University, Thailand. Funded by Ministry health and Family Welfare, Bangladesh.

Work- Position and Address

Position	Organization	Length of Service
Senior Staff Nurse	Rangpur Medical College Hospital, Rangpur, Bangladesh	26, May 1994 to till now

Phone: 01822441934

Email: akhatun@ymail.com