

EFFECTS OF AN EDUCATIONAL INTERVENTION ON BREAST CANCER
SCREENING AND EARLY DETECTION IN
VIETNAMESE AMERICAN WOMEN

A DISSERTATION

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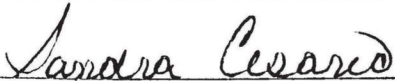
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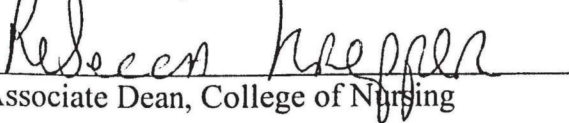
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ABSTRACT

TUONG-VI VO HO

EFFECTS OF AN EDUCATIONAL INTERVENTION ON BREAST CANCER SCREENING AND EARLY DETECTION IN VIETNAMESE AMERICAN WOMEN

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This experimental two-group pretest-posttest study evaluate the effects of an educational intervention on breast cancer knowledge, breast cancer health beliefs, breast self exam (BSE) knowledge, breast self-exam practices and confidence levels, mammogram activities, and clinical breast exam with a group of Vietnamese American women living in Houston and its vicinity. Using chi-square and one-way ANOVA statistical analyses, demographic data and the effects of the intervention were evaluated with a sample of 94 Vietnamese American women who were recruited via radio announcements and posted flyers. These participants were randomized to control ($n=41$) and experimental ($n=53$) groups. The Health Belief Model (HBM) was used as the conceptual framework. Components of Leininger's transcultural nursing theory were incorporated into the design of the educational intervention. Two components of the HBM (perceived seriousness [$F(1,91) 11, p < 0.01$] and perceived benefit [$F(1,91) 11, p < 0.01$]) were found to be significantly different between the 2 groups. Three months

after the intervention, there were significant increases in the level of BSE knowledge [$F(1,92) = 8.45, p = 0.005$], level of confidence in performing BSE [$F(1,91) = 1.54, p = 0.009$], as well as a higher self-report of BSE practice [$X^2(1, N = 94) = 7.27, p = 0.007$]. There was a significant change noted within the experimental group in breast cancer knowledge [$F(1,98) = 13.94, p < 0.001$]. There were no significant changes found between the control and intervention groups in respect to breast cancer knowledge [$F(1,91) = 1.7, p = 0.2$], self-reported mammogram activities [$X^2(1, N = 74) = 0.16, p = 0.90$], and self-reported clinical breast exam [$X^2(1, N = 88) = 0.98, p = 0.32$].

These findings indicated a culturally sensitive educational intervention could have a positive impact on the health beliefs and practices related to screening and early detection of breast cancer in this population. Longitudinal studies are needed to evaluate the impact of the educational intervention over time.

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CHAPTER 1

INTRODUCTION

Problem of Study

According to the United States (U.S.) Census Bureau (2003), the U.S. population included 28.4 million foreign-born immigrant people in 2000. Vietnamese immigrants to the U.S. belong to one of the fastest growing segments of the nation's population. The Vietnamese Americans (Vietnamese hereafter) population grew from 614,547 in 1990 to 1,122,528 in 2000, representing an 82.7% increase over a 10-year period (U.S. Census Bureau, 2003). The increase in the Vietnamese population has been attributed primarily to immigration rates and a redefinition of the Asian and Pacific Islander group. In 1980, 95% of the Asian and Pacific Islander population was comprised of six Asian groups: Chinese, Filipino, Asian Indian, Japanese, Korean, and Vietnamese (Bouvier & Agresta, 1985). In 2000, the Vietnamese sub-group was the fourth largest Asian American group (U.S. Census Bureau, 2002). It has been projected that by 2030, the Vietnamese population will be the second largest segment of the Asian-Pacific Islander population, equaling or surpassing the Filipino population, which is currently the second largest U.S. Asian-Pacific Islander minority (Jenkins, McPhee, Bird, Pham, Nguyen, & Nguyen, 1999). Texas has the second largest Vietnamese population in the U.S. It is estimated that 120,000 Vietnamese persons live in the Houston area which makes this the fourth largest

Vietnamese population among U.S. cities as well as the largest population of any southern U.S. city (U. S. Census Bureau, 2004).

Despite the massive growth in the Vietnamese population, there is a deficit in research about this community's health problems and preventive behavior practices, especially in the area of breast cancer screening. Although infectious diseases in this group have been well studied (Centers for Disease Control and Prevention [CDC], 1992), the Vietnamese population's risk for noninfectious diseases such as cancers and barriers to preventive health care are not fully understood. Preliminary survey data in California, where 46% of all Vietnamese Americans reside, indicated that behavioral health risk profiles of the Vietnamese are dramatically different from those of the state's overall population (CDC, 1992).

Rationale for the Study

Although heart disease is the leading cause of death for the general Caucasian population, cancer is the leading cause of death for the Vietnamese population (Agency for Healthcare Research, 2003). Breast cancer is the most common cancer in Vietnamese women (McPhee, 2002). Additionally, Vietnamese women are often diagnosed with breast cancer at a younger age compared to the general U.S. population with about 50% of the women younger than 50 years of age at time of diagnosis (Lin, Phan, & Lin, 2002). Vietnamese women tend to have more mastectomies as treatment methods. At the time of diagnosis, most of these cancer cases are already at advanced stages, and distant metastases are found in 25% of the Vietnamese women compared to 22% of white women (Smith, Cokkimides, & Eyre, 2003), which makes optimal treatment difficult.

Findings also indicate that the longer Vietnamese women live in the U.S., the more their cancer rates approach the rates of white American women (Lin et al., 2002).

Early screening and detection could possibly improve and save hundreds of lives among Vietnamese women, especially in regard to breast cancer. For all of these reasons, studying breast cancer screening behaviors of Vietnamese women will help health care professionals gain a better understanding of the health beliefs and practices among this population so that prevention and early detection programs can be designed specifically to meet their needs. This study tested a culturally appropriate and culturally sensitive educational intervention on breast health and early breast cancer detection methods. This study offered a face-to-face, hands-on educational intervention with Vietnamese women. An experienced oncology nurse who is Vietnamese and is fluent in English and Vietnamese provided the intervention. Findings from the study will add to the body of knowledge regarding culturally sensitive breast cancer education.

Theoretical Framework

The health belief model (HBM) presented by Becker (1974) provided the theoretical framework for this study. The HBM attempts to explain why some people who do not have a certain illness take actions to avoid the illness. This model has been used in various studies exploring the personal perceptions and actions of women at high risk for breast cancer and examining health belief influences on the practice of BSE and other screening actions (Calnan & Moss, 1984; Calnan & Rutter, 1986; Champion, 1987; Wyper, 1990). Becker's model outlines five factors or dimensions associated with an individual's decisions in the area of health and illness behaviors. The dimensions of the

model are perceived susceptibility, perceived severity or seriousness, perceived benefits and costs, motivation or cues to action, and modifying factors such as self-efficacy (Becker, 1974). The first dimension, perceived susceptibility, relates to the individuals' beliefs regarding the accuracy of the diagnosis. Even though individuals might perceive susceptibility, the individuals must have some sense of severity such that they believe there might be serious organic or social repercussions. Thus, the second dimension, perceived severity, plays an important role. The third dimension is perceived benefits and costs, meaning that if individuals recognize the benefit of some treatment modality they are likely to comply. Yet, the cost works inversely to reinforce noncompliance when there are negative aspects to therapy that might include cost, duration of therapy, side effects, and social factors such as impact on family or work. The fourth dimension, motivation, can be a reinforcing factor, influencing individuals to seek treatment or comply with recommendations. The fifth dimension or modifying factors includes factors in addition to the previously mentioned dimensions that might influence health beliefs and practices; they include such things as patient-practitioner relationship, physician continuity, demographic and personality variables, structural, attitudes, and enabling experiences.

In summary, according to the HBM, it is proposed that if individuals perceive their own susceptibility to a disease, believe that the disease is severe, recognize the benefits as well as the barriers to preventive action, receive facilitative cues, and are motivated in health matters, there is a high likelihood that these persons will engage in preventive behavior for that disease. Because the model is focused on perceptions and

subjective probability estimates of benefits and barriers to action, it has been described as a cognitively based, decision-making model (Lauver, 1987).

The HBM may assist the researchers and health care providers to understand the health beliefs and practices of the Vietnamese population in regard to breast cancer screening and early detection. It is an appropriate theoretical framework in studying their perceived risks and benefits, perceived susceptibility, knowledge of breast cancer, health beliefs and practices, and perceived barriers to participation in health prevention activities such as clinical breast exams, mammography, and cues for actions. Better knowledge of the cancer health beliefs and practices of the Vietnamese population along with the assessment of its members' cancer knowledge, prevention, and early detection behaviors can be obtained so appropriate interventions can be planned to improve their cancer preventive practices.

Additionally, because the target population for this study was Vietnamese American women who were mostly born and raised in Vietnam, cultural sensitivity was a factor in the design of the educational intervention. Leininger's transcultural nursing theory served as a guide in the culturalogic assessment for this population (Leininger & McFarland, 2002). Leininger defined health as incorporating the beliefs, values, and actions that are culturally known and used to preserve and maintain well being. A central tenet of Leininger's theory is that it is important for the nurse to understand the culture's view of illness. In order to understand a cultural group's health practices, one must understand cultural beliefs and values. For example, the Vietnamese frequently use folk treatments for health care (Davis, 2000). They believe in the concepts of yin and yang.

Their daily routines and lifestyle are less rushed and less stressful compared to the typical U.S. daily lifestyle. Vietnamese people tend not to rush because their concept of time is much more elastic (Catanzaro & Moser, 1982; Nguyen, 1985; Owen, 1987). They place a high value on controlling and suppressing negative feelings. Vietnamese women usually respect modesty. Touching or exposing oneself, even for learning, is not appropriate or acceptable. The lack of breast cancer screening among Vietnamese women could be due not only to the lack of knowledge and cost, but also due to the cultural values of personal modesty (McPhee, 2002) along with cultural influences on concepts of screening and prevention. All of these cultural beliefs and values were incorporated into the study intervention.

Assumptions

The following assumptions applied to this study:

1. Vietnamese American women can perceive benefits in learning about cancer preventive behaviors.
2. Vietnamese American women can perceive breast cancer as an illness that can threaten their health and well being.
3. Vietnamese American women will provide accurate responses when answering questions pertaining to their knowledge and perceptions of breast cancer.

Hypotheses

The following seven hypotheses were tested. Vietnamese women, age 18 years and older, who receive a 1-hour breast health and breast cancer educational session provided at a Vietnamese community center by an oncology registered nurse will report:

(1) a significant change in health beliefs regarding breast cancer 3 months after the educational intervention as measured by the Health Belief Model Scale Questionnaire (HBM Scale) (Champion, 1988);

(2) an increase in breast cancer knowledge 3 months after the educational intervention as scored on the HBM Scale (Champion, 1988);

(3) an increase in BSE knowledge 3 months after the educational intervention as scored on the HBM Scale (Champion, 1988);

(4) an increase in confidence level when performing BSE 3 months after the educational intervention as measured by the HBM scale (Champion, 1988);

(5) a higher self-report of BSE practice 3 months after the educational intervention;

(6) a higher self-report of mammogram activities 3 months after the educational intervention, and

(7) a higher self-report of clinical breast exam 3 months after the educational intervention compared to Vietnamese women who do not receive the educational intervention.

Definition of Terms

The following terms were defined for this study:

Vietnamese American woman: A female U.S. resident or citizen with an origin of birth in Vietnam or a descendant of Vietnamese parents (Wikipedia, 2006). For this study, a Vietnamese American woman (or Vietnamese woman) was one who is 18 years old or

older, met study criteria, and self-identified as either being born in Vietnam or as a descendant of Vietnamese parents.

Breast Self Examination (BSE): Breast self-examination is the inspection and palpation of one's own breasts for detecting any changes or abnormalities (Redeker, 1988). For this study, BSE was measured by the knowledge questions on the scale developed by Champion (Champion, 1988) (see Appendix A).

Clinical Breast Exam: Breast examination, which was performed by the health care providers such as doctors or trained nurses (Scanlon, 1984). For this study, clinical breast examination was self-reported by the participants.

Knowledge of BSE: Factual information one can recall about the cancer detection technique of BSE including the purpose of performing BSE, frequency of performing BSE, and techniques used in BSE (Champion, 1990). For this study, knowledge of BSE was measured by knowledge questions on Champion's scale (Champion, 1988) (Appendix A).

Knowledge of breast cancer: Knowledge of breast cancer is information one can recall in regard to cancer of the breast, such as signs and symptoms, incidence rates, risk factors, and detection techniques as measured on a scale (Phippps, Cohen, Sorn, & Braitman, 1990). For this study, knowledge of breast cancer was measured by the knowledge questions on Champion's scale (Champion, 1988) (Appendix A).

Cancer health practices: Activities or routines that women perform in order to prevent or detect cancer including activities such as performing BSE monthly and having mammograms as recommended by health care professionals (Pham & McPhee, 1992).

For this study, these practices were measured by the Champion HBM Scale (Champion, 1988) (Appendix A).

Cancer preventive behaviors: Behaviors that women perform, either routinely or by recommendations, to prevent cancers such as taking in a nutritious diet, exercising, and obtaining adequate rest (Jenkins, McPhee, Bird, & Bonilla, 1990). For this study, these behaviors were measured by the Champion HBM Scale (Champion, 1988) (Appendix A).

Confidence level: A feeling of assurance, especially of self-assurance or the state or quality of being certain (Merriam-Webster Dictionary, 2006). For this study, self-confidence was measured by Champion's (1988) Health Belief Model Scale (Appendix A).

Educational intervention: An educational program, in which women are taught about breast cancer including signs and symptoms of breast cancer, BSE, early detection, and screening recommendations. For this study the educational intervention program followed the American Cancer Society guidelines and recommendations (American Cancer Society, 2006).

Health beliefs: Health beliefs are variables that influence one's feelings about wellness and illness, and that may also influence one's practice of preventive behaviors (Rosenstock, 1966). For this study, health beliefs were operationally defined as the perceived susceptibility to and the perceived seriousness of breast cancer measured by the Health Belief Model Scale developed by Champion (1988).

Health practices: Health practices are health behaviors that women perform in order to prevent or detect cancer and to maintain health such as performing BSE monthly, having

mammogram as recommended by health care professionals, seeking health care providers on a routine basis for recommended tests (Pham & McPhee, 1992). For this study, health practices were measured by a demographic data form (Appendix B).

Limitations

Because a convenience sample was used for the study, the generalization of results could only apply to the sample itself. The sample may not reflect all Vietnamese American women.

Summary

Since 1975, the Vietnamese American population has grown significantly to become one of the most populous and important ethnic groups in the country. Along with the increase in population growth, health problems and diseases are also increasing. Cancer is the leading cause of death in this population (Agency for Healthcare Research, 2003) and breast cancer is one of the most common cancers in Vietnamese women. Screening and early detection have been known to save lives. However, this population has a very low cancer screening participation rate. Their health beliefs and practices need to be explored further to determine their influences on the decisions to participate in the cancer screening activities. Educational interventions are needed to increase their knowledge of breast cancer, their screening and early detection participation, and their confidence level in performing BSE. Using the Health Belief Model along with Leininger's transcultural assessment guide, hypotheses were formulated in regard to the effects of this educational intervention program.

CHAPTER 2

REVIEW OF LITERATURE

The literature was reviewed for pertinent information regarding the aim of this study: to determine the effects of an educational intervention program on breast cancer screening and early detection beliefs and practices in a group of Vietnamese American women. Searches were done using key words such as breast cancer, detection, prevention, screening, Vietnamese women, through Texas Woman's University library database, Texas Medical Library, the M. D. Anderson Cancer Center research library database, the Cumulative Index of Nursing and Allied Health, PsycInfo, PubMed, and MedLine as well as inter-library loan for requested articles. Vietnamese American census background databases were searched through the U.S. Census Bureau, Center for Disease Control and Prevention, and other government agencies. A search via Google engine also was done, but most of the obtained information was not in the form of research studies.

Electronic bibliographic databases were searched using identified keywords. Print materials and article reference lists were hand searched to identify materials to include in this literature review representative of the current published nursing literature. Since there was little nursing research done in the area of breast cancer screening in Vietnamese American women, the literature search was extended to other disciplines such as community and public health, behavioral science, medical science, and psychosocial science. Even with these broader search efforts, there were not many published studies.

To have a longitudinal understanding of the progress of the behavior research in this population, the literature search included studies from the 1970s when the Vietnamese people first migrated to the U.S. To further compare the health screening beliefs and practices of this population in different geographic locations, the literature search also included studies in different countries other than the U.S.

Articles and research reports deemed appropriate for this study were culled from the literature and classified into the following categories: (a) the Health Belief Model and its use in BSE studies to explain compliance and prediction with certain health practices and behaviors, (b) morbidity, mortality, and risk factors for breast cancer in Asian American women, (c) breast cancer in Vietnamese American women, (d) barriers to breast cancer screening in Vietnamese women, (e) screening behaviors in Vietnamese women, and (f) interventions to improve the low breast cancer screening participation rate in Vietnamese women.

The Health Belief Model

The Health Belief Model has been reported in the literature since the 1950s and been used widely in many disciplines such as behavioral science, psychology, preventive medicine, and nursing. According to Rosenstock (1974), health decision-making is a process in which the individual moves through a series of stages or phases. Interactions with person or events at each of these stages influence the individual's decisions and subsequent behavior. Hochbaum (1958) studied more than 1,000 adults in three U. S. cities in an attempt to identify factors underlying the decision to obtain a chest x-ray for the detection of tuberculosis. They linked beliefs in susceptibility to tuberculosis and

beliefs in the benefits of early detection. Results showed that in the group exhibiting belief in their own susceptibility to tuberculosis and the belief that overall benefits would accrue from early detection, 82 percent had at least one voluntary chest X-ray. On the other hand, of the group exhibiting neither of these beliefs, only 21 percent had obtained a voluntary X-ray. Thus, the study supported that a particular action is a function of the two interacting variables-perceived susceptibility and perceived benefits. This study was one of the first using the Health Belief Model as a framework.

HBM and BSE Studies

Many researchers have used the HBM as a theoretical framework, either by itself or in combination with another framework, in various settings to evaluate compliance with recommended BSE practices, the beliefs of the participants, and the predictors of the screening behaviors among various populations. Calnan and Moss (1984) used the HBM to examine the decision to adopt preventive health behavior in a group of 825 women living in a large provincial city located in the studied health district in the United Kingdom. The women were from 45 to 64 years old. They were interviewed at their own homes 1 month prior to the BSE class ($N=678$) and 1 year later ($N=540$). The BSE class was held at a hospital clinic and consisted of a short instructional film and a talk from a nurse. The level of compliance with BSE practice was examined after BSE classes were given. Compliance was defined as continued adherence to the practices recommended, such as regular BSE with proper techniques or the identification of breast abnormalities and the immediate seeking of professional medical care once an abnormality is detected. The results indicated that health beliefs were the best predictors of compliance. Women

who were assessed as feeling particularly vulnerable to breast cancer were much more likely to comply than those who had perceived moderate or low vulnerability.

Champion (1985) researched the relationships between attitudes about BSE and breast cancer and the frequency of performing BSE with a convenient sample of 301 urban women living in the United States. The participants were recruited from various areas such as churches, seniors' citizen centers, and business establishments in the metropolitan area, a day care center, swim teams, industry, and a university class. Self-administered Likert scale questionnaire was given to each participant, either in person or by mail. Five independent variables, susceptibility, seriousness, benefit, barriers, and health motivation, were measured using a rating scale. The frequency of BSE was the dependent variable. Step-wise multiple regressions were used to test the effects of the five independent variables on BSE frequency, either in combination or as individual variables. Twenty-six percent of the variance in BSE was from the 5 independent variables ($R^2 = .51, p \leq .001$). Individually analyzed, the barrier variable had the largest portion of variance (23%). The participants who perceived fewer barriers to BSE were more likely to have a high frequency of performing this activity. Health motivation was also found to be a significant variable influencing the practice of BSE. Participants who reported a higher frequency of BSE were found to have a higher score in health motivation. The results supported the relationships between the HBM variables and the frequency of BSE practice.

In 1986, Calnan and Rutter studied the relationships between health beliefs and health behavior to evaluate the benefits of BSE in the early detection of breast cancer in

England. The study consisted of three groups of women participants. A first group of 278 women were invited and attended a BSE class. A second group of 262 women were invited to attend the BSE class but had declined. A third group consisting of 594 women, were not taught BSE, and served as the control group. Self reported behaviors and beliefs were measured before the BSE class and at 1 year after the class. The first interview showed no differences among the 3 groups. However, the second interview showed a significant change in the first group (BSE class attendees) with the BSE frequency and technique. For the non-attendee group, BSE frequency and technique also had increased although it was less than for the BSE attended group. For the control group, there was a slight increase in BSE technique only. At the first interview, the best predictor for BSE frequency and technique was the perceived vulnerability of breast cancer. For the second interview, the perceived value of BSE was the major predictor for BSE behavior. The results showed that beliefs do predict behavior. However, the evidence also suggests that the relationship between behavior and the dimensions of belief, which the model addresses, was not as strong as expected.

Massey (1986) surveyed 225 rural southern women living in the U. S. who practiced BSE six or more times per year and found that these women had higher perceived susceptibility scores than women who practiced BSE less than six times per year. A convenient sample of 335 women was obtained from work or from a club meeting. This sample was also stratified according to age- under 50 years or 50 years of age or older, education- less than high school graduate or high school graduate and above, and race- white or nonwhite. The instruments used were the demographic

questionnaire and the Health Belief Questionnaire which was designed to measure the perceived susceptibility to breast cancer. There were 241 questionnaires returned, but only 225 were usable since 16 were incomplete. About 40% or 91 women reported practicing BSE 6 or more times during the preceding year. The other 60% or 134 women reported practicing BSE less than 6 times. A one-tail t- test was used to determine the differences between the means of these 2 groups. The mean score of the perceived susceptibility of the women who practiced less than 6 times was significantly lower than that of the group of women who practiced BSE6 or more times during the preceding year. Age, education, and race were also found to be significantly correlated to perceived susceptibility among these women. A typical woman who perceived herself more susceptible to breast cancer thus would perform BSE more frequently than her counterpart, would be younger than 50 years of age, have a higher education, and be white.

Champion (1987) studied the relationship of BSE frequency to the HBM variables, using a convenience sample of 588 women recruited from an outpatient clinic at a U. S. university medical center. The participants' age were ranging from 12 to 74 years old ($M=33.86$, $SD= 13.9$). Majority of them were white, married, and Protestant. Components of the HBM such as susceptibility, seriousness, benefits, barriers, health motivation, control and knowledge of breast cancer and BSE were measured using a Likert scale questionnaire previously tested for validity and reliability. The results, using multiple regression and discriminate analysis, indicated that barriers, knowledge, and susceptibility were correlated with frequency of BSE ($R= .53$, $F=32.3$, $p \leq .001$) and had

accounted for 28% of the total variance. When analyzed individually, perceived barrier also was found to have a significant influence on the frequency of BSE practice ($R = .22$). The study results demonstrated that persons who were taught BSE by a doctor or nurse practiced BSE with greater frequency than those taught in other ways.

Rutledge (1987), in a study of factors related to women's practice of BSE, found that low perceived barriers were positively correlated to frequency of BSE practice. The sample consisted of 103 women who volunteered to participate in the study from church circles, volunteer groups, and special interest groups. Each was given a questionnaire packet to take home to answer and then to mail to the investigator. The instruments included the demographic data form, a modified version of the Champion (1984) Health Belief Model, the Tennessee Self-Concept Scale, and the Norbeck Social Support Questionnaire. There were 93 women who met the study criteria whose answers were included for the analysis. Their ages ranged from 25 to 85. Most of the women were married (66%), were white (84%), averaged 15.8 years of education, were Protestant (90%), and had an annual family income over \$50,000. Analysis showed that the perceived benefits of BSE were positively associated with frequency of BSE practice. Women with perceived lower barriers to BSE also reported a significant relationship with BSE practice. No significant relationship was found between BSE frequency and social support, and perceived severity of breast cancer.

The work of Champion in 1988 also supported the HBM's variables. The sample consisted of 380 women, age 35 years and older, who were contacted via random digit telephone dialing. Correlations were computed between attitudinal variables from the

HBM and the proficiency, intent, and frequency of BSE. Results supported the combine effect of susceptibility, seriousness, barriers, health motivation, and control on intent to practice BSE.

Redeker (1989) investigated the relationship between health beliefs, health locus of control, and practices of BSE in 48 suburban women whose children were attending three private preschools. Participants' ages ranged from 26 to 44. The majority of them were white, Catholic, and all had completed a high school education. A Likert type scale using agree or disagree was used. Component of health beliefs such as perceived susceptibility to breast cancer and perceived benefits of BSE were incorporated in to the instrument to measure the frequency of BSE practice. Discriminant functions analysis was used to analyze the data. Women who scored high on the health beliefs and the internal health locus of control scales reported practicing more BSE than non-BSE practitioners [$F(2, 44) = 3.796, p = 0.03$]. There were no differences between the moderate and high frequency of BSE participants in health beliefs and the internal health locus of control variables.

Wyper (1990) further studied the HBM variables, especially the effect of the combination of perceived susceptibility and seriousness of the breast cancer. Data were collected from 202 women recruited from the clinic of group practice physicians at a health center affiliated with a university, breast evaluation and education program sponsored by a hospital, local churches' women's group, and public health fair events. The participants' age range was approximately equally divided with one-third under 40 years old, one-third between 40 and 59 years, and one-third 60 and older. They were

primarily white, well educated with 82% having more than high school education, and 47% of them Protestant. The instrument used was the 1987 Champion HBM Scale. For analysis, susceptibility and seriousness were combined as one variable contributing to the threat of breast cancer. Results indicated that the participants perceived that BSE had many benefits ($M=5.43$, $SD= 0.66$) related to breast cancer detection and few barriers ($M=1.78$, $SD= 0.71$). However, this combined variable was not able to explain more variables in the practice of BSE as when they were separated. The perceived barriers and BSE performance ($R = -0.44$) were negatively correlated meaning the fewer perceived barriers to performance of BSE a woman has, the more frequently she will perform BSE.

Phipps, Cohen, Sorn, and Braitman (1999), completed a qualitative study of cancer knowledge, beliefs, and screening behaviors of 19 Vietnamese and 19 Cambodian women using the HBM as their theoretical framework. Data were collected via telephone interview from a convenience sample extracted from a registry of patients who received prenatal care in a gynecology and obstetrics clinic located in North Philadelphia. The Vietnamese and Cambodian women were identified through this registry. A second convenience sample of Vietnamese women was obtained from the registry of a Vietnamese community organization since the clinic sample was mostly Cambodian women. Bilingual and bicultural interviewers conducted the telephone interview using the native language of the participant. The investigators attempted to identify beliefs and barriers to the participation in cancer screening in these two groups of women. The median age for the Cambodian women was 34, ranging from 21 to 56. For the Vietnamese women, the median age was 41 years ranging from 21 to 60. The medium

numbers of years in the U. S. was 9 for the Cambodian, and 5 for the Vietnamese. In term of cancer knowledge, 47% of Vietnamese women could not define cancer compared to 84% of the Cambodian women. Years in the U. S. was not correlated with cancer knowledge. Only 10 out of 38 participants were able to name a method or way to prevent cancer. The 5 dimensions of the HBM were applied to this research and were found to be effective to guide the study.

In 2003, McGarvey and colleagues studied the differences in cancer screening practices and attitudes among Hispanic, Vietnamese, and Cambodian low-income women in northern Virginia. The HBM was used to determine the participant's readiness to act or compliance to cancer screening recommendations in relation to whether she perceived that she was susceptible to breast cancer disease. The sample consisted of 25 Hispanic women, 28 Vietnamese women, and 25 Cambodian women who were recruited from a health and occupational counseling agency. Inclusion criteria included women at age 40 or older that had an income at or below the federal poverty level. The Health Belief Mode Scales for Measuring Beliefs Related to Breast Cancer from Champion (1993) was used as the instrument for the in person interview to assess the participant's attitudes regarding risk of breast cancer and breast cancer screening behaviors. The interviews were conducted either at the participant's home or at the agency using the participant's own native language. The Vietnamese group reported having the lowest income level with the medium annual income of \$11,699 ($SD=\$8,229$). There were no significant differences found between the groups in the receipt of mammogram (47% of Vietnamese, 54% Hispanic, and 64% of Cambodian). The Vietnamese and Hispanic groups perceived

cancer to be more serious, and were motivated to act or find ways to detect cancer as an early stage. Interestingly, the Vietnamese group reported that they were less susceptible to getting breast cancer and were more confident in their ability to detect breast cancer than the other groups. A summary of these studies, in a chronological order, is presented in Table 1.

HBM and Nursing Research

Champion (1990), in a follow up to the 1988 study, found support for the attitudinal variables specified by the HBM related to frequency and proficiency of performance of BSE. By using computer-generated random digit dialing as the initial contact, 362 women were recruited from a list of 9,000 telephone numbers from women who lived in a large metropolitan area and surrounding counties. Their ages ranged from 35 to 90 years of age with a mean of 50.4 years. Data were collected via in-house interviews at initial visit and telephone interviews at 1 year. Health Belief Model Scales (Champion, 1984) with a 7-point Likert scale were used to measure attitudinal variables such as perceived susceptibility, seriousness, benefits, barriers, control, and health motivation. The results of this study indicated there were a high level of perceived control ($M=6.65$), perceived benefits ($M=6.21$), health motivation ($M=5.68$), and seriousness ($M=5.51$). There was a moderate level of confidence in performing BSE ($M=11.16$ {on a range from 3-15}, $SD=2.79$). The performance of BSE from the second year interview showed an increase in frequency and proficiency. The over all results indicated that the perceived barriers, knowledge of breast self examination, and the

ability of past performance can predict the woman's current performance in the adherence to the cancer guideline and breast self-examination.

The lifetime work of Champion on breast self-exam and breast cancer using the HBM has been served as a foundation for many other nurse researchers. Schulmeister and Lifsey (1999), both nurse researchers, studied the cervical cancer screening knowledge, behaviors, and beliefs of 96 immigrant Vietnamese women using the HBM and Leininger's transcultural nursing theory as theoretical frame works. The participants were recruited from 5 churches in southern Louisiana. A Vietnamese nurse who spoke both Vietnamese and English collected the data during a face-to-face interview in a private meeting room at these churches. The instrument was constructed with open-ended questions, which had derived from the HBM and from the review of literatures. It consisted of health beliefs, cancer screening practices, sociodemographic factors, and acculturation variables. Their participants' ages ranged from 18 to over 65 years old. About 77% of the 96 Vietnamese women could not state correctly the purpose of the Pap test. Seventy-four of them had never heard of the Pap test and seventy-eight of them thought that it was unlikely that they would ever get cervical cancer. Cultural beliefs and gender differences between health care providers and the participants may have hindered their participation in cervical screening and early detection in this population. Although this study was in the area of cervical cancer, the application of the HBM was, once again, demonstrated in this study.

Table 1

Chronological Summary of the Health Belief Model and Breast Self Exam Studies 1984-2003

Author/Date	Study Design	Sample Size <i>N</i>	Setting	HMB Components and Outcomes
(1984)	Intervention trial	Pre: <i>N</i> =678	Homes interviewed.	Health beliefs were the best
Calnan & Moss	with pre and post BSE interview.	Post: <i>N</i> =540	BSE held at hospital clinic, England.	predictor for the compliance of BSE.
(1985)	Self- administered	<i>N</i> = 301	Churches, class, home,	High frequency of BSE practice
Champion	Likert-Scale via survey and mailed.		senior citizen center, home, university, industrial companies.	associated with perceived less barrier and high score of health motivation.
(1986)	Intervention with 3	Control: 594	Home interview	Pre-intervention: Perceived
Calnan & Rutter	groups: control, BSE intervention, & declined BSE group	Experimental: 278 Non BSE attendee: 262	BSE class held at hospital clinic, United Kingdom.	vulnerability of breast cancer was the best predictor for BSE. Post- Intervention: Perceived value of BSE was the major predictor for BSE.

Table 1 (continued)

Author/Date	Study Design	Sample Size <i>N</i>	Setting	HMB Components and Outcomes
(1986)	Descriptive	<i>N</i> = 225	Work place or	Higher perceived susceptibility
Massey	Survey		club meeting in U. S.	of breast cancer women had a higher frequency of BSE practice. Age, education, and race were correlated to perceived susceptibility.
(1987)	Survey	<i>N</i> = 588	Out-patient clinic at	Barriers, knowledge of breast
Champion	Liker-Scale questionnaire		a U. S. university	cancer, and perceived susceptibility were correlated with frequency of BSE.
(1987)	Survey, mailed	<i>N</i> = 103	Churches volunteer, special interest group	High perceived of BSE benefit correlated with high frequency.
(1988)	Survey; digit	<i>N</i> = 308	Telephone	Positive correlation between the
Champion	random telephone		interview	HBM components and BSE practice

Table 1 (continued)

Author/Date	Study Design	Sample Size <i>N</i>	Setting	HMB Components and Outcomes
(1989) Redeker	Survey	<i>N</i> = 48	3 preschooler schools	High scores of health beliefs reported practicing more BSE.
(1990) Wyper	Survey	<i>N</i> = 202	A health center clinic	Less perceived barriers had a higher frequency of BSE.
(1999) Phipps et al.	Telephone interview (qualitative approach)	<i>N</i> = 38 (19 Vietnamese, 19 Cambodian)	Participant's home	Vietnamese women had low knowledge level of breast cancer. The HBM dimensions applied to the research.
(2003) McGarvey et al,	Survey Interview	<i>N</i> = 78 (25 Hispanic, 28 Vietnamese, 25 Cambodian)	Health & Occupational counseling agency Or at homes	No significant difference between 2 groups in mammogram usage. Vietnamese perceived cancer to be more serious than Cambodian but less susceptible to breast cancer.

Mikhail and Petro-Nustas (2001) published their work in the *Journal of Nursing Scholarship* on testing the Arabic version of Champion's HBM Scales in 519 Jordanian female university students and their employees in 2 universities in Jordan. The questionnaire was back translated after the content was validated by a group of judges. The participants ranged from 18 to 59 years of age. Results indicated that the seriousness, benefits, and motivation scales did not show a strong correlation with the last 12 months BSE practice. However, perceived barriers and susceptibility showed a strong correlation with BSE in the past 12 months BSE practice. Perceived susceptibility, motivation, and benefits all showed significant correlations with the intention to practice BSE in the future. Results again proved supported that the HBM is applicable for behavioral nursing research.

In the same year, Sadler, a nurse, and her colleagues (2001), also studied the breast cancer knowledge, attitudes, and screening adherence among 275 Vietnamese women using the HBM as their theoretical framework. Their ages ranged from 20 to 71 years. Participants were recruited from the breast cancer education program, which was offered at collaborating Asian grocery stores. Baseline sociodemographic data and breast cancer knowledge, attitudes, and screening practices were obtained. Telephone follow-up survey data were collected to assess the participants' frequency of breast cancer screening activity after the intervention. Visual teaching aids with breast cancer education materials were displayed at the participating Asian grocery stores to raise awareness of breast cancer and mammography. The results showed that about 35.6% of them indicated that they had enough information. Yet, 87.3% (240) of the women were interested in

receiving more educational information, either to keep their families healthy or for their personal breast cancer information. Perceived barriers were lack of time (47.6%), language barriers (20.7%), and lack of financial support (10.9%). The results indicated that knowledge was the needed precursor for the women to follow the breast cancer screening guidelines.

Recently, Lamanna (2004) used the HBM as her theoretical framework to study 224 male and female American college student's knowledge and attitudes about skin cancer and perceived risks of developing skin cancer. The participants' ages ranged from 18 to 25 years old and all attended classes on the main campus of the State University of New York at Stony Brook, New York. The instruments were designed based on the HBM framework, and they were self-administered. The results showed that majority of the participants did not think that sun tanning poses a high risk for skin cancer (80.4%). However, 53.1 of the participants perceived themselves as more susceptible to skin cancer than other who did not use sun tanning. They did perceive that skin cancer was a serious illness. Yet, they did not see any reasons to use protection despite lack of barriers to using protection (78.6%).

The above studies indicated that the HBM has been well accepted in the nursing profession and often used as the theoretical or conceptual framework for studies related to health care knowledge, attitudes, and behaviors. A chronological summary of all of these studies can be found in Table 2.

Morbidity, Mortality, and Risk Factors for Breast Cancer in Asian American Women

The American Cancer Society estimates that in 2006, an estimated 212,920 cases of breast cancer will be diagnosed among women in the U.S., and 40,970 breast cancer-related deaths will occur (Cancer Facts & Figures, 2006). The incidence rate of breast cancer among Asian/ Pacific Islanders is 96.6 per 100, 000 which compares with a rate of 141.1 per 100,000 white females (Cancer Facts & Figures, 2006). The mortality rate of breast cancer among Asian/Pacific Islanders is 12.7 compared with 25.9 white female counterparts per 100, 000 age-adjusted to the 2000 U.S. standard population (Cancer Facts & Figures, 2006). Well-established risk factors are early menarche, late menopause, late parity, having a first-degree relative with breast cancer, and having previously had a breast biopsy. But the number of breast cancer cases and deaths that will occur in Vietnamese American women and the prevalence of these risk factors in the Vietnamese American community are not known.

Race and ethnicity have an impact on both risk factors and mortality in breast cancer stages at time of diagnosis (Li, Malone, & Daling, 2003). Significant ethnic differences in mortality have been demonstrated between black, Hispanic, and white women. A retrospective study was conducted to evaluate the breast cancer stage, race, and ethnicity in a cohort of 124,934 women using data from the Surveillance, Epidemiology, and End Results Program (SEER). This cohort had 8,834 Asian/Pacific Islanders. Results indicated that when compared to non-Hispanic whites, the women in groups of blacks, American Indians, Hawaiians, Vietnamese, Mexicans, South and

Central Americans, and Puerto Ricans had 20% to 200% greater risks of dying of breast cancer after it was diagnosed (Li, et al, 2003). This SEER database did not publish separate data on Vietnamese Americans. This group is currently classified as Asian and Pacific-Islanders. The SEER data indicated that, at the time of the study, for breast cancer, the incidence was lower in Asian/Pacific Islanders compared to all races (97.2 versus 135 per 100,100) and mortality was lower (12.5 versus 27.7) (Ho, Yamal, Atkinson, Basen-Engquist, Tortolero-Luna, & Follen, 2005). Although Texas has the second largest Vietnamese population in the U.S., the Texas Cancer Data Center has not sub-classified this population from the Pacific Islander category in the database. These findings seem comparable to other major U.S. cancer database registries.

Breast Cancer in Vietnamese American Women

Although heart disease is the leading cause of death for the general Caucasian population, cancer is the leading cause of death for the Vietnamese American population (Agency for Healthcare Research, 2003). Breast cancer is the most common cancer in Vietnamese American women (McPhee, 2002). These women are diagnosed with breast cancer at a younger age when compared with the general U.S. population (Le, Gomez, Clarke, Glaser, & West, 2002; Lin, Phan, & Lin, 2002). Results of a study from the Greater San Francisco Bay Area (Lin et al., 2002) showed that Vietnamese women, at the time of breast cancer diagnosis, were of a younger age when compared with other ethnic or racial subgroups with a mean age of 51.0 years. Almost half of the Vietnamese American women (49.6%) were younger than 50 at the time of diagnosis. Vietnamese American women tended to have more mastectomies as treatment methods. At the time

of diagnosis, most of these cancer cases were already at advanced stages (Smith, Cokkimides, & Eyre, 2003; Tang, Solomon, Yeh, & Worden, 1999), and distant metastases were found in 25% of the Vietnamese women compared to 22% of the white women (Smith et al., 2003), which makes optimal treatment difficult.

Li and colleagues (2003) noted that in comparison with non-Hispanic whites, African Americans, Native Americans, Filipinos, Chinese, Koreans, Vietnamese, Indians/Pakistanis, Mexicans, South/Central Americans, and Puerto Ricans living in the U.S. have been found to have a statistically significant increased risk of having estrogen receptor (ER) negative, progesterone receptor (PR) negative breast cancers. There was a 40% elevation in risk of ER-negative/PR-negative tumors among Asian/Pacific Islanders. There was a 1.4- to 3.1-fold elevation in the risk for ER-negative/PR-negative tumors among the Vietnamese American women. A 1.5- to 2.4-fold increase in developing adenocarcinoma of the breast also was noted in the Vietnamese American women. The histology of the cancers is also of different types. Understanding cancer receptor data can help health care providers develop effective cancer therapy specifically for certain ethnic groups. Understanding the attitudes toward treatment can help health care providers develop interventions that are easy to apply and have a good chance of being adopted by a specific ethnic group (Ho et al, 2005).

Early screening and detection could possibly improve the mortality rate of Vietnamese American women, especially in regard to breast cancer. Findings also indicated that the longer the Vietnamese American women lived in the U.S., the more their cancer rates approached the rates of white American women (Lin et al., 2002).

Table 2

Chronological Summary of the Health Belief Model and Nursing Research 1990-2004

Author/Date	Study Design	Sample Size	Setting	HMB Components and Outcomes
(1990) Champion	Survey Computer generated random digit dialing In-house interview first Initial. Telephone follow up 1 year later.	N= 362	Participant's home	Perceived barriers, knowledge of BSE, and past performance can predict one's current performance in the adherence of the cancer guideline and BSE.
(1999) Schulmeister & Lifsey	Survey Face-to-face interview	N= 96	5 churches	Poor knowledge of cervical cancer. Cultural beliefs, health care provider gender might have hinder the participation in cervical early screening and detection.

Table 2 (continued)

Author/Date	Study Design	Sample Size	Setting	HMB Components and Outcomes
(2001) Mikhail & Petro- Nustas	Survey	N= 519	University in Jordan	HBM Scale was translated to Arabic and back-translated. Perceived benefits and motivation did not show strong correlation but perceived barriers and susceptibility had a strong correlation with BSE in the past 12 months.
32 (2001) Sadler, et al.	Intervention Base line collection Telephone f/u	N= 275	Asian grocery stores	Perceived barriers were lack of time, language barrier, and lack of financial support.
(2004) Lamanna	Survey Self-administer	N=144	New York State University	Skin cancer was perceived as a serious disease and susceptible disease. But 80.4% of participants did not think that sun tanning is high risk for skin cancer.

According to the National Asian Women's Health Organization, certain U. S. born-Asian American women were found to have a six times greater risk for breast cancer when compared with Asian-born counterparts (National Asian Women's Health Organization, 1998).

Schechter, Toniolo, Dai, Thuy, and Wolff (1997) completed a study using a small group (21 women with breast cancer and 21 women who served as controls) of Vietnamese women in Northern Vietnam to determine if breast cancer was linked with exposure to Dichlorodiphenyltrichloroethane (DDT), which is a chlorinated insecticide used primarily for vector control of malaria in developing countries. The results indicated there was no relationship between DDT exposure and breast cancer. In 2002, Le and associates (2002) studied the cancer incidence patterns among native Vietnamese in the U.S. and in Ha Noi, Vietnam. They found that between these two groups of women, breast cancer was the most commonly diagnosed type of cancer regardless of geographic location.

For Vietnamese American women, less is known about risk factors and barriers to medical care. Data from studies of other Asian groups indicate a lower risk of developing breast cancer. For Chinese Americans and Japanese Americans, two other groups included in the Asian and Pacific Islander segment, cancer incidence and mortality data indicated both the age-adjusted annual incidence rates and the age-adjusted annual mortality rates for breast cancer were much lower for these two populations than for either whites or blacks in San Francisco or whites in Hawaii (Ziegler & Weisberger, 1999).

Data from the Los Angeles County cancer registry regarding breast cancer in Vietnamese American and Chinese American women from 1972 to 1988 showed a proportional incidence ratio (PIR) of 53 in 45 Vietnamese patients and a PIR of 90 in 362 Chinese patients (CDC, 1992). Although the Vietnamese sample was small, these data placed the Vietnamese PIR lower than any crude or age-adjusted annual incidence for which data is reported, except Japanese women living in Hawaii. For the Chinese, their PIR was much closer to the incidence reported for whites than that reported for Asian groups. Swerdlow (1991) reported low risk and low mortality from breast cancer in Vietnamese women refugees in England and Wales. It has been hypothesized that these parameters may change as the Vietnamese adopt Western habits including the Western diet.

Cancer Screening Behaviors in Vietnamese American Women

Jenkins, McPhee, Bird, and Bonilla (1990) studied 215 Vietnamese Americans, 21 years of age or older, who were randomly selected from households telephone lists, rosters of refugee resettlement organization, Vietnamese religious organizations, mutual assistance associations, and refugee medical clinics in the San Francisco Bay area. The participants were randomly drawn from a computer program. An hour face-to-face interview was conducted after the participant had met the study criteria and agreed to participate in the study. The questionnaire was written in English, translated into Vietnamese, and back translated into English. Results showed that the Vietnamese Americans reported lower cancer screening rates and less knowledge about cancer and its risk factors than did the general U.S. population. About one third thought that cancer is

contagious. Eighty nine percent of the women participants had never heard of the Pap test. Findings in this study also indicated that a greater percentage of Vietnamese American women compared to general U.S. women had never had or were overdue (undergone last exam more than a year previously or never) for a breast exam and a mammogram as well as Pap test. Other researchers who compared Vietnamese Americans in California with all Californians found similar differences including the fact that almost half the surveyed Vietnamese American women had never had a clinical breast examination and had never had a mammogram compared with 11% and 6% of California women, respectively (CDC, 1992).

In reviewing other literature, it was apparent that the Vietnamese immigrant women have limited knowledge and practices of breast and cervical cancer screening as found by Jenkins and associates (1990) in the survey of 215 Vietnamese adults. Pham and McPhee (1992) studied the knowledge, attitudes, and practices of breast and cervical cancer screening among 107 Vietnamese women living in the San Francisco area during the fall of 1990. The computer randomly selected four hundred Vietnamese household addresses from a list of 1,504 Vietnamese households. The questionnaire surveys were mailed to the participants. The mean age of the participants was 37 years with ages were ranging from 19-77 years old. The researchers noted that there were a high number of respondents who indicated a lack of knowledge about identifying risk factors (55% for breast and 57% for cervical) and common signs and symptoms for breast (37%) and cervical cancers (39%). About 34% of these Vietnamese women with age >40 never have had a mammogram; 54% never have had a Pap smear.

Evidence from a study of 645 Vietnamese women in the San Francisco Bay Area (Hiatt, Pasick, Perez-Stable, McPhee, Engelstad, Lee, Sabogal, D'Onofrio, & Stewart, 1996) also indicated that the Vietnamese American women's rate for participation in breast self-examination (BSE) is very low with 66% of the participants having reported never performing BSE. These researchers found that Vietnamese American women aged 50 or older had the lowest rates of first time (46.4%) mammography when compared with their counter parts (92.7%: white, 90.9%: black, 79.6% Latina, 72.7% Chinese). The rate of recent clinical breast examination in the Vietnamese women aged 18 years or older also was very low (29.5%) when compared to other populations such as Caucasian (76.7%), African-Americans (73.3%) Latinas (69.5%), and Chinese (56.3%).

In 1997, McPhee, Bird, Davis, Ha, Jenkins, and Le investigated barriers to breast and cervical cancer screening among Vietnamese American women by conducting face-to-face interviews with 306 Vietnamese women living in San Francisco and 339 women living in Sacramento. The results indicated that only about one half of the Vietnamese American women reported receiving clinical breast exams, Pap smear tests, and mammograms. About one third of these women were up-to-date for these screening tests.

In 1999, Phipps, Cohen, Sorn, and Braitman interviewed 19 Cambodian and 19 Vietnamese Americans living in the Philadelphia, Pennsylvania area. Forty-seven percent or 9 Vietnamese women who participated in the study did not know what cancer was. About 74% of the total participants or 28 participants could not identify a cancer prevention strategy.

Schulmeister and Lifsey (1999) published the results of their study of cervical cancer screening knowledge, behaviors, and beliefs of a group of 96 Vietnamese immigrant women in 5 churches located in the southern Louisiana area. Data was collected via a face-to-face interview by a bilingual nurse in the language that the participants preferred, either in English or in Vietnamese. The questionnaire used was designed from the literature review of the HBM and structured in open-ended format. Participants' age ranged from 18 years to 65 and older, most had finished high school (57%), and married (57%). English was spoken a majority of time by 52% of the women, and the average time in the U. S. was 19.71 years (range from 2-23 years). Results showed that three-fourths (77%) of these women could not state the purpose of the Pap test, which is a cervical cancer-screening test. Of the women questioned, only 14% were aware of the higher incidence of cervical cancer in Vietnamese women.

Yi and Reyes-Gibby in 2002 confirmed this low rate of cancer screening participation of the Vietnamese women. These researchers collected data from 345 Vietnamese women aged 40 years and older in a low-income Houston area. A self-administered questionnaire was used as a tool to assess acculturation, access to care factors, sociodemographic characteristics, perceived susceptibility, and severity of risk for breast cancer. Only 38% of these 345 women reported ever having done a BSE, 33% reported having had a mammogram, and 49% reported having had clinical breast exam.

In the same year, Reed and colleagues (Reed, Assefi, Gooding, & Teklemariam, 2002) published the results of their study, using a focus group qualitative method, on knowledge and attitudes regarding routine health screening and prevention from 30

Somalia, Vietnamese, and Latina women participants at Harborview Medical Center, Seattle, Washington. Results indicated that about 50% of the Vietnamese women had had a mammogram. Of note, all of the Vietnamese participants were 40 years old and older. They were ambivalent about cancer screening concept. Some thought that it was important for them to practice cancer screening. Some were not convinced and wanted more information about cancer screening. Their research also indicated that the Vietnamese women participants preferred culturally sensitive educational programs with audiovisual presentations and educational materials with diagrams to the written materials, even though these were printed on their own native language.

In 2005, Ho et al studies a group of Vietnamese American women in Harris Country, Texas, using the HBM as the theoretical framework. Twelve hundred surveys were mailed out using telephone directory and church directories. Two hundred and nine women responded to the survey and data were analyzed using simple descriptive analyses and nominal logistic regression. Sixty seven percent of the respondents reported had ever received a Papanicolaou; 55% of them had performed a BSE; 45% of them had clinical breast examination done, and 45% had received a mammogram during their lifetime. About 15% of the respondents had a mammogram during the previous year. The mean score for susceptibility were 8%, seriousness 52%, benefits of BSE 72%, benefit of mammography 22%, barriers to BSE 17% and to mammography 10%, and to health 48%. The most significant predictors of Papanicolaou test, BSE, clinical breast examination, and mammography use were being married, high educational level, lack of barriers, and a

family history of cancer, older age, and increased perception of seriousness of the disease. A chronological summary of these studies can be found in Table 3.

Barriers to Breast Cancer Screening

There are many potential barriers to breast cancer screening in the Vietnamese female population. These barriers could be due to cultural, acculturation, trans-cultural issues, socioeconomic status, their beliefs, or the beliefs of their health care providers.

Cultural, Accultural, and Trans-cultural Issues

Culture may be defined as a group of people who share similar characteristics. Although individuals have their own views regarding health beliefs and practices, culture plays a significant role in defining those views (Buchwald, Caralis, Gany, Hardt, Johnson, Muecke, et al, 1994). Ideas about the perceived health of the individual and family are based on cultural beliefs and encompass a number of ideas, such as the cause of illness, treatment, and preventive health practices (Buchwald et al., 1994). Despite significant health care problems, Southeast Asians appear to be low users of existing health care and Vietnamese immigrants do not seem to practice preventive health care (Lindsay, Narayan, & Rea, 1998). Important cultural differences between Asian immigrants and health care providers that may affect their access to the medical care system have been described by Hoang and Erickson (1985). Among these cultural barriers are language, religious beliefs, cultural traits (family unit, propriety of interpersonal relations, passivity, sense of permanence, notion of sexuality), concepts of health and disease, and health practices. Medical translation also can pose a problem to the accuracy of the information that health care providers need to communicate to their Vietnamese patients (McPhee,

2002). The health care system in the U.S. can be confusing, inconvenient, and inadequate for the cultural background of this population. Furthermore, preventive health care is not a culturally integrated concept and may understandably be perceived, especially among more recent immigrants, as a low priority compared with their urgent need for essentials such as housing, employment, and English language proficiency.

The longer the Vietnamese American resides in the U.S., the more the importance of transculturation and acculturation. From the Vietnamese American woman's viewpoint, the process of transculturation can help her to see and respect the cultures of other people and of the domain in which she resides. From the nursing point of view, transculturation and transcultural nursing can guide health care providers and nurses to deliver the care to different populations in a congruent plan or manner. Leininger (1992) stated, "The transcultural nurse specialist is one who has the knowledge, sensitivity, and skill to care for people of diverse cultural backgrounds" (p.83). Leininger recognized that in today's society, we are in need of nurses with transcultural knowledge. The knowledge base of these nurses establishes a foundation for delivering care that provides for a better understanding of patients' health beliefs, family orientation, and religious and spiritual orientation. In essence, this foundation focuses on a holistic worldview of the patient, which is the foundation of nursing science.

Shanahan and Brayshaw (1995) examined the knowledge of the Vietnamese culture within a small group of Australian community nurses to see if these nurses were providing culturally appropriate care to meet the needs of their Vietnamese patients.

Table 3

Chronological Summary of Studies on Cancer Screening Behaviors in Vietnamese American Women 1990-2005

Author/Date	Study Design	Sample Size /Instrument	Ever had mammogram/ BSE	Vietnamese Women Characteristics
(1990)	Survey	215	50%	Lower cancer screening rate, less
Jenkins, et al.	Face-to-face interview	Questionnaire translated to Vietnamese then back Translated to Vietnamese		knowledge about cancer and its risk factors. Never had or over due with breast exam and mammogram
14 (1992)	Survey	107	66%	Lack of knowledge about identifying
Pham & McPhee	Mailed	Questionnaire translated to Vietnamese then back Translated to Vietnamese	(n=31)	risk factors (55%), common signs and symptoms for breast cancer (37%). 34% women with age > 40 never have had mammogram.

Table 3 (continued)

Author/Date	Study Design	Sample Size /Instrument	Ever had mammogram/ BSE	Vietnamese Women Characteristics
(1996)	Survey	645	46.4%	Lowest rate of first time
Hiatt, et al.	Mailed	Questionnaire	36%	mammography, low rate of recent clinical breast exam (29%)
(1997)	Face-to-face	306	50%	Participants reported only one-third is
42 McPhee, et al.	interview			current with recommended screening tests.
(2002)	Survey	345	33%	About 49% women reported having
Yi & Reyes-Gibby		Self-administer questionnaire	38%	had clinical breast exam.
(2002)	Focus group	30 Vietnamese, Somalia,	50%	Vietnamese participants were
Reed, et al.		and Latino women		ambivalent about cancer screening concept. They preferred cultural sensitive educational programs.

Table 3 (continued)

Author/Date	Study Design	Sample Size /Instrument	Ever had mammogram/ BSE	Vietnamese Women Characteristics
(2005) Ho et al.	Survey Mailed	209 HBM Scales, translated to Vietnamese, back- translated to English	45% ever had mammogram in their lifetime 55% had performed BSE 27% performed BSE monthly	The most significant predictors of BSE, clinical breast examination, and mammography use were being married, high educational level, lack of barriers, a family history of the cancer, older age, and increased perception of seriousness.

The sample consisted of 17 female nurses with ages ranging from early twenties to late fifties. Their knowledge of the Vietnamese culture was limited. Twelve of the seventeen participants (72%) expressed difficulty in caring for the Vietnamese patients due to language differences, failure to keep appointments, lack of feedback, and communication problems. Also, twelve of the participants did not think that their interventions were always culturally appropriate. This study indicated that the understanding of a patient's culture and being culturally competent are needed if one wants to deliver care effectively to this population.

Acculturation is a process in which individuals' attitudes, beliefs, and behaviors change to adapt to the new environment or the society in which they live (Leininger, 1977; Tang, Yeh, & Worden, 1999). Assessing the level of acculturation is important to the care of the Vietnamese. One way of assessing levels of acculturation and adherence to Western treatment modalities is to evaluate the adherence to monthly or yearly checkups. The importance of routine evaluations to detect or prevent early possible illnesses should be emphasized. A patient's adherence to a routine checkup schedule is often an indication of the emerging concept of prevention. Prevention is often a difficult concept for the Vietnamese because of its underlying relationship to time and future. The Vietnamese have a rich history dating back more than 4,000 years, and the Vietnamese culture frequently maintains a view of the world that stresses the past and present and not necessarily the future (Stauffer, 1999).

Ho, McBride and Rodgers (2005) interviewed 40 elderly Vietnamese men and women (ages ranged from the early 50s to the late 90s) who resided at an Asian

American senior center located in the metropolitan area of a southwestern U. S. city. This group showed some emerging concepts of preventive behaviors such as adherence to monthly or yearly check up appointments and seeking medical advice when they were sick. The practices seen in this population showed that they had incorporated the idea of prevention for the future and indicates acculturation to a more Western worldview with its concept of time. Studies of acculturation as a barrier to breast cancer screening have shown that English language proficiency correlated with more recent screening participation among Hispanic women (Harlan, Bernstein, & Kessler, 1991; Marks, Solis, Richardson, Collins, Birba, & Hisserich, 1987; Solis, Marks, Garcia, & Shelton, 1990). Yi (1992) studied 141 older Vietnamese women's breast and cervical cancer screening behavior in relation to acculturation and screening recommendation adherence. The results indicated that this group of women had lower rates of screening when compared to women in the general population. This is somewhat the contrary to the strongest acculturation predictors for mammography, sociocultural preference, and length of residence (Yi, 1992).

Socioeconomic Status

In 1996, Hiatt and associates studied the relationship of race/ethnicity, socioeconomic status, and culture to breast and cervical cancer screening practices in 4,228 Latina, white, black, Chinese, and Vietnamese women in the San Francisco Bay Area. The participants' ages were ranging from 18 to 74 years old. Vietnamese women reported the lowest level of breast cancer screening mammography (46.4%) when compared with the other 4 groups (white: 92.7%, black: 90.0%; Latina 79.6%; Chinese:

72.7%). The Vietnamese participants also reported the lowest rate (34%) for ever having had a Pap test when compared with the other 4 groups (white: 98.7%; black: 98.3%; Latina: 75.6%; Chinese: 66.7%). Levels of education and insurance status also had an important role in these groups with regard to obtaining recommended screening tests or examinations (Hiatt et al., 1996).

McPhee et al. (1997) noted a correlation between level of education and the recognition of screening tests such as BSE, CBE, and mammogram. Samples were recruited in households in selected blocks that the 1990 Census had identified had at least had 9% of Vietnamese as residents. The data was gathered via face-to-face interviews in the houses of the participants in two different areas: San Francisco (306 women), and Sacramento (339 women). About 50% of the participants in both areas had never had a mammogram or clinical breast exam. About 32% of them had never heard of mammogram and 48.6% of them had never heard of clinical breast exam. For the Pap test, 29.4% had never had this test, and 73% of the women had never heard of this test.

The level of education was a predictor for the cancer screening awareness. Participants with six or fewer years of education were significantly less likely than other women with higher education to hear of these cancer screening tests. The higher the education level that a woman had, the more she would have heard of these screening tests. In terms of receipt of screening tests, number of years of education and number of years since immigration to the United States were both consistent predictors.

Educational level, again, was noted to have a major part of being one of many barriers in the breast cancer screening application for the Vietnamese women. A cross-

sectional survey of a convenience sample of 143 Vietnamese women out of 284 Vietnamese residents living in Bay La Batre, Alabama, was conducted to identify aggregate-specific cancer risk factors in this population. From this study, Xu and colleagues noted a positive correlation between higher educational level and cancer knowledge and screening behaviors (Xu, Ross, Ryan, & Wang, 2005). Insurance status ($r=-.174, p<.01$), age ($r=.196, p<.01$), and educational level ($r=-.155, p<.05$) were also identified as associated with perceived difficulties in accessing to health care services (Xu et al., 2005).

Health Care Providers

Evidence has indicated that breast cancer mortality can be reduced by 30% to 35% through population-based screening programs that use regular mammography. Among women 50 years of age and older who have regular mammograms, the reduction in mortality can be as high as 40% (Lerman, Rimer, Trock, Balshem, & Engstrom, 1990). This significant reduction in mortality also is partially due to secondary early screening measures such as breast self-exam and clinical breast exam. The American Cancer Society (2006) currently recommends clinical breast exam along with mammography screening yearly beginning at age 40 and the option of performing breast self-exam monthly for asymptomatic women. Women aged 20 to 39 should receive clinical breast exams every 3 years and perform a monthly breast self-exam if they elect to do so.

Despite the well-documented effectiveness of mammography in the early detection of breast cancer and the increasing trend toward its use, this examination continues to be underused and to fall far short of the national goal of the National Cancer

Institute: to screen 80% of all women 50 years of age and older by the year 2000 (National Center for Health Statistics, 1993). In early 1990, the Mammography Attitude and Usage Study (MAUS) found that over 60% of all women 40 years old and older had at least one mammogram, but only 31% of these women were following the recommended mammography screening guidelines (CDC, 1990).

Several investigators have identified the importance of patient and physician-related factors that may be barriers to mammography screening (Bastami, Marcus, & Hallatz-Brown, 1991; Lerman et al., 1990). For the Vietnamese population, among the most common patient related barriers reported in the literature is a lack of recommendation by the Vietnamese physician. This lack of recommendation may be due to their own lack of preventive medicine knowledge to their medical training in Vietnam which did not place emphasis on preventive medicine (Jenkins, McPhee, Bird, Pham, Nguyen, Nguyen, et al., 1999; McPhee, 2002; McGarvey, et al., 2003), belief that the test is unnecessary in the absence of symptoms, the cost of the procedure, fear of radiation exposure (McPhee, 2002; Reed et al., 2002), lack of knowledge or misunderstanding of the recommended guidelines, inconvenience, or lack of time (Bastami et al., 1991; Lerman et al., 1990).

Physician gender also plays a role in cancer screening practice among the Vietnamese women. It has been reported that the male Vietnamese physicians may be more sensitive to the cultural issue in respecting the female patient's modesty in regard to personal female examinations (Jenkins et al., 1999). However, the Vietnamese female patients may be reluctant to ask or receive breast or pelvic examinations due to the

gender of the physicians (Jenkins et al., 1999).

In 2000, Nguyen and his colleagues (Nguyen, Nguyen, McPhee, Nguyen, Tran, & Jenkins, 2000) studied the effects of promoting a cancer prevention intervention among Vietnamese physicians in California. The 20 participants were followed over a period of 3 years. The interventions included continuing medical education seminars, computerized or manual cancer screening reminders, Vietnamese-language health education materials, newsletters, and oncology data-query programs. Charts were audited before and after interventions. The targeted activities were routine check up, Pap testing, pelvic examinations, clinical breast examinations, mammography, hepatitis B serology, hepatitis B immunizations, and smoking cessation counseling. The results showed an increase in performing rate for smoking cessation counseling, Pap testing, and pelvic examinations. Post-intervention. There were no significant performance changes in the areas of clinical breast exam and mammography activities. The low incidence of breast cancer among the Vietnamese woman may have accounted for the low performance for the clinical breast exam and recommendations for mammography. However, the sample size of this study was small, thus, generalization of these findings to other Vietnamese physicians may be limited.

Another factor influencing the practice of BSE and mammogram among the Vietnamese American women is their trust in health care providers and the perceived mutual respect between them and their health care providers (Reed et al., 2002). The more they trust their health care providers, the more likely that they will be to follow the cancer screening recommendations and guidelines.

Interventions to Improve Breast Cancer Screening Participation Rates in Vietnamese American Women

Very few studies were identified in the literature regarding interventions to improve the low breast cancer screening and early detection participation rates in Vietnamese American women. Most of the studies were done with the primary focus to find factors affecting the participation rate, such as psychosocial, cultural, health care structural, and perceptual factors, but not to intervene.

In 1998, Bird, McPhee, Ha, Le, Davis, and Jenkins implemented an intervention to increase knowledge and adherence with screening and early detection recommendations for breast and cervical cancer among Vietnamese American women via a controlled trial over a 3-year period. The participants in the intervention group were face-to-face interviewed by the trained lay female workers at the pre-intervention ($N=306$) and post-intervention ($N=345$) periods. A low-income district of San Francisco served as the intervention geographic area. Vietnamese women living in the area of Sacramento served as the control participants. There were three hundred and thirty nine women interviewed ($N=339$) at the pre intervention and 372 at the post intervention periods. Sixteen women were trained to become group leaders and lay health workers. Working with their own trained assistants, they conducted multiples educational sessions on breast cancer, general prevention, and cervical cancer over a 3-year period.

The strategies included educational sessions with small groups of participants, distribution of educational material, and health promotional events. The educational sessions were held in the group leader's house. The educational sessions consisted of

screening recommendations, routine check up, preventive information, risk factors of cancers, and benefits of early screening for breast and cervical cancers. The group leaders and their assistants were given stipends. Vietnamese health education materials were distributed to the small educational sessions, health fairs events, medical offices, and Vietnamese frequented areas. The education materials were in printed forms such as poster and calendars. Health fair or health day events were conducted in the San Francisco area during Vietnamese New Year celebration and in Buddhist temples and Protestant churches. Activities provided during the health fair included vision and dental screening, blood pressure measurement, and height and weight measurements. There were personals available to answer questions in regard to breast and cervical cancer screening recommendations.

The 147- item instrument, containing sociodemographic, level of acculturation, and medical care access variables, was used to measure outcomes such as the participant's self-report of having heard of the tests, having had the routine or prevention check up, and maintenance of cancer screening tests as recommended. Data was collected over the 4-year duration. A significant increase in rate of recognition of screening tests between pre and post intervention surveys was reported. There was a statistically significant increase of 35% in recognition of CBE; in mammogram by 20%; and Pap smear by 56%. Participants also reported having had CBE with a 35% increase, a 15% increase of mammography practice; and an increase of 20% in Pap smear practice. Lengths of years living in the U. S (from 2 to 10 years), high cancer fear index, not having a regular physician, and being in the younger age group (18-29 years were

reported as predictors for the educational class attendance. These investigators reported using lay health care workers with a small group educational sessions as an intervention strategy that could be successful in raising cancer awareness and adherence to cancer screening recommendations.

In 2001, Nguyen, Vo, McPhee, and Jenkins reported results of an intervention for promoting early detection of breast cancer among Vietnamese American women in California. The intervention group consisted of Vietnamese women living in Alameda County community, California. They were randomly telephone- interviewed at pre-intervention ($N=384$) and post-intervention ($N=405$) over a 2.5 year period. Vietnamese women in Los Angeles and Orange Counties served as controls. They also were randomly telephone-interviewed at pre-intervention ($N=404$) and post-intervention ($N=402$) time points. The intervention strategies included neighborhood-based educational activities, a media campaign, educational material dissemination, and continuing education seminars for physicians. Neighborhood-based educational activities consisted of conducting small group breast cancer screening classes, providing assistance to Vietnamese women with appointment-making, and referral to free breast cancer screening services, staffing a Vietnamese-language breast health telephone line, and participating in health fair and community coalitions. The media campaign strategy involved breast cancer and screening articles written in Vietnamese and English languages and printed in Vietnamese and English newspapers. Advertisements about breast cancer and early detection methods were aired on Vietnamese television and radio stations, which covered Alameda County, the intended intervention area.

To enhance the effect of these intervention strategies, three different themes on breast cancer and its screening recommendations were presented in continuing medical education seminars for the Vietnamese physicians practicing in Alameda County. A pretest/posttest control group design was used to evaluate the effect of the intervention. The instrument used was a 108-item questionnaire including sociodemographics information, health insurance, source of health care, knowledge, attitude, and beliefs regarding cancer, and utilization of preventive care services. Chi-square tests, multiple logistic regression analyses, and basic statistics were used to analyze the research data. The response rate from the intervention group was 41.9% (pre- intervention) and 54.6% (post- intervention). The response rate from the control group was 38.6% and 36.5% at pre- and post- intervention. Most of the respondents in the intervention group had less than 12 years of education and an income below poverty level when compared with the control group. The control group was more likely to have fluent English proficiency, have health insurance, and have male Vietnamese physicians.

Analysis indicated that the women in the intervention group reported a statistically significant increase in plans to have clinical breast exam (CBE) (76.3% to 85.2%, $p=0.002$), but not in familiarity with CBE, not having it done, or keeping themselves current of CBE recommendations. However, the rate for CBE in these 3 areas was significantly increased in the control group (all $p \leq 0.003$) as well. At the post intervention multiple regression analysis, the results indicated that the women in the intervention group were less likely to recognize, receive, and plan mammogram than the control group ($OR: 0.43-0.80$; 95% $CI: 0.24-1.44$, $N=405$). The control group reported a

higher rate of recognition of CBE, had more frequently received CBE, had planned and been up to date with CBE in greater numbers than the experimental group. However, within the intervention group, it was reported that having a greater exposure to various intervention elements seemed to increase the recognition of CBE, and in turn, helped these women to plan CBE and mammograms more often than the women with less exposure to those intervention methods.

Yi and Luong (2005) conducted a randomized controlled study focusing on a breast cancer education program for 345 Vietnamese American women living in apartments in low-income communities in the Houston area. Participants were recruited via fliers distributed at the apartments and from house-to-house solicitation. The instrument collected data on demographic information, breast cancer knowledge, and past experience with breast cancer screening procedures. This questionnaire was given to all participants prior to the intervention. The intervention group ($N=179$) was given a 1-hour educational class, which contained information on screening and breast health, recommendations for screening, and screening referral information. Two bilingual lay health educators were recruited to conduct 20 educational sessions over a 3-month period. Telephone follow up surveys were conducted 5 months after the intervention. The control group ($N=166$) received printed educational materials at the end of the study.

Knowledge and attitudes about breast cancer and breast cancer screening practices along with intention to use cancer-screening procedures for the future were significantly changed in the intervention group ($p<0.01$ to $p<0.001$). Cultural appropriateness and convenient location of the educational intervention for Vietnamese women appeared to

enhance the sample size. However, from the data presented, an increase in knowledge and positive attitude about breast cancer and its screening practices were also noted in the control group (percentage of knowledge gained ranged from 1.5 to 29.5%). This could be from the halo effects of the intervention since the apartment complexes are in proximity of each other. Thus, the participants may have had an opportunity to share information with each other. A summary of these interventional studies can be found in Table 4.

Summary

Although descriptive studies have been conducted to identify the health beliefs, practices, barriers, knowledge and predictors of breast cancer screening in Asian, but there were little studies found describing actual interventions. Most of the studies were exploratory studies, measuring the Vietnamese women's knowledge, beliefs, and practices related to breast cancer and the recommendations for early screening and detection. The 3 interventions, as described above (Bird et al, 1998; Nguyen et al. 2001; and Yi & Luong, 2005) all used lay workers as the educators conducting these breast health and cancer educational classes. None reported using the hands on method with breast examination or using breast models to help the participants to practice BSE. Their descriptions of these interventional education sessions did not indicate utilizing health care professionals such as nurses as the breast cancer educators in their research.

Table 4

Chronological Summary of Intervention Studies to Improve Breast Cancer Screening Participant Rates in Vietnamese American Women 1998-2005

Author/Date	Study Design	Sample Size /Instrument	Intervention Variables	Outcome Findings
(1998) Bird, et al.	Controlled trial over 3 years period. Face-to-face interview	Pre-intervention: 339 Post-intervention: 372 147-item questionnaire.	Breast, cervical and general prevention educational session	Significant increase in recognition of CBE (35%), mammogram (20%), 15% mammogram practice
25 (2005) Yi & Luong	Randomized controlled with telephone follow-up at 5 months post intervention	Control: 166 Intervention: 179	1-hour educational sessions with information of screening and breast health	Significant changes in knowledge and attitudes about breast cancer and practices along with intention to use cancer screening procedures for the future were reported in the intervention and control groups.

CHAPTER 3

PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

This study utilized an experimental two-group pretest-posttest design. This design was used to evaluate the effects of an educational intervention on breast cancer knowledge, breast cancer health beliefs, BSE knowledge, BSE practices and confidence levels, mammogram activities, and clinical breast exam with Vietnamese American women. In this chapter the setting, population and sample, protection of human participants, instruments, data collection, and treatment of data are presented.

Setting

The setting for this study was a Vietnamese community center, which belongs to a community-based non-profit organization, which is located in southwestern Houston, Texas. This community center is used for meetings, educational events, health fairs, and other community activities. The community center is open 5 days a week, from 8:00 AM to 5:00 PM, and on the weekend as needed. The center is located in an area where many Asian Americans live and work. The venue is on a centrally located street amidst many Asian businesses where there is a large volume of traffic that includes mostly Asian Americans. This community center is located in the heart of the Vietnamese business and entertainment areas. It is estimated that about 120,000 Vietnamese Americans live in the Houston-Galveston-Brazoria area (U.S. Census, 2004). Due to the recent reconstruction

of the Houston midtown area, most of the Vietnamese businesses have moved to the southwest area, making this area a more Asian- populous location (Wikipedia, 2006).

Population and Sample

The population for this study was Vietnamese American women aged 18 years or older. The sample included any Vietnamese American woman, 18 years old or older, who responded to the radio announcement and/or the community-posted flyers, met study criteria, and could read, write, and/or understand the Vietnamese and/or English language. The participants answered the questionnaires in either the Vietnamese or English language.

The sample size was determined by a power analysis of data collected from a pilot study (Ho, 2005). Using the effect size of 0.63 from the pilot study data, a one-tailed test with $\alpha = 0.05$ and $\beta = 0.80$ and 30% attrition, 42 participants for each group were needed (Cohen, 1988). In order to enhance sample size, 3 educational sessions were scheduled on a single day of data collection.

Protection of Human Subjects

The study proposal was approved by the Institutional Review Board of the Texas Woman's University Houston Center. The anonymity and privacy of those who participated in the study were protected by not having names identified on the instruments and interview data. The study was conducted in a culturally sensitive manner. The educational contents were delivered in a direct and non-judgmental manner to minimize any discomfort or embarrassment. The educational session was conducted in a closed classroom, with all female participants. Informed consent was obtained prior to the

study. The participants had opportunities to ask questions and obtain answers to their satisfaction. All answers and information were kept confidential. Data was kept in a locked file cabinet at the researcher's residence.

Instruments

The Health Belief Model Scale

The Champion's (1988) Health Belief Model Scale was used to measure the participant's breast cancer knowledge, confidence level in performing BSE, breast cancer beliefs and practices, and activities pre- and post-intervention. The instrument has a total of 52 items. The first 31 items pertain to health beliefs. These items measure the five aspects of the health belief model: (a) perceived susceptibility, (b) perceived seriousness, (c) perceived benefits, (d) perceived barriers, and (e) health motivation. Answers are reported using a rating scale from 1 to 5, with 5 being strongly agree and 1 being strongly disagree. Missing data are considered neutral and have a value of 3. The other 21 questions are breast cancer and BSE knowledge items and include 5 items pertaining to personal experience with breast disease, 7 items pertaining to knowledge of breast cancer, and 8 items pertaining to knowledge of BSE. There is one question pertaining to the level of confidence regarding BSE, which was not part of the original questionnaire. The American Cancer Society identified the lack of confidence in performing BSE in 1989 as a reason why BSE is not performed on a monthly basis (Cope, 1992).

The instrument's validity and reliability were previously tested (Champion, 1987, 1988, Gray 1990; Ho et al, 2005). A convenience sample consisting of 301 women from day care centers, businesses, industry, churches, senior citizen's centers, and university

classes was obtained. Questionnaires were given by mail and in person. Content validity was established by submitting all items to a panel of judges who had studied the HBM (Champion, 1987). Construct validity was established through factor analysis and multiple regressions. Internal consistency reliabilities using Cronbach's alpha ranged from .63 to .76. Test-retest reliabilities utilizing Pearson r ranged from 0.47 to 0.62 (Champion, 1987).

Gray (1990) used the HBM Scale with a convenience sample of 347 rural women to examine variables related to BSE. Internal consistency reliability of the HBM scale, again using Cronbach's alpha, ranged from 0.60 to 0.78. Results of the test-retest correlations using Pearson r ranged from 0.47 to 0.86 with $p < 0.001$. In 1992, the HBM scales were used to measure the knowledge of breast cancer and its cancer screening practices in 100 Vietnamese participants. The Cronbach's alpha ranged from 0.78 to 0.87 (Ho, 1992, unpublished master thesis).

In another study to determine predictors of breast and cervical screening in Vietnamese women in Harris County, Houston, Texas, Ho, and colleagues (Ho, et al., 2005) used the HBM scale to measure the beliefs related to breast and cervical cancers. Data from 209 participants were collected from 1,200 mailed questionnaires. The Cronbach's alpha for this study ranged from 0.67 to 0.86 indicating a good internal consistency using the instrument in Vietnamese. A recent pilot study utilized a Vietnamese language version of the HBM scale. A total of 11 Vietnamese women participants received an educational intervention related to breast cancer beliefs and early

screening and detection. The Cronbach's alpha coefficients from this study ranged from .76 to 0.82 (Ho, 2005, pilot study).

Pilot Study of Methods

The pilot study of the proposed methodology and instrumentation was conducted in a community center on a Saturday in the fall of 2005 utilized a Vietnamese language version of the HBM Scale. The hypotheses were: Vietnamese women age 18 years and older who receive a 1-hour breast health and breast cancer educational session provided at a Vietnamese community center by an oncology registered nurse will: (1) report a significant change in health beliefs and the perception of the breast cancer as scored on the Breast Belief Model Scale Questionnaire (HBM Scale) (Champion, 1988); (2) an increase in BSE and cancer knowledge as scored on the HBM Scale (Champion, 1988); (3) a reported increase in confidence level when performing BSE as measured by the HBM at one-month follow up.

Recruitment for the study was conducted via radio announcements on the Vietnamese radio station and 18 Vietnamese American women came to the community center on the day of the pilot study. Three of the women refused to participate because they did not have enough time. Three women were not eligible for the study: two women could not read either Vietnamese or English and one woman was not a resident of Harris or Fort Bend counties (inclusion criteria for pilot study). After informed consent was obtained, the HBM Scale instrument and a demographic data instrument were administered. The educational session, using the ACS model, began with the didactic part, using a power point presentation given by the investigator. A breast examination

was then demonstrated using the Health Edco soft breast plastic model. One participant had to leave during the educational session because her child was crying. After the session was over, the participants took a 10-minute break, and then the same HBM instrument was administered to the remaining participants. Each participant was given a \$10 telephone calling card, a breast plastic model, and a BSE card to take home. The participants were instructed to return to the community center in one month for the follow-up questionnaire. The researcher made two telephone reminders to each participant during the second and third weeks following the educational session. At the one-month follow-up the HBM Scale and the follow up questionnaire were administered to 5 returned women. The results of the responses are shown in Table 5 and Table 6.

Table 5

Means, Standard Deviations, and Effect Sizes of the Pilot Study (N = 5)

Instruments	Baseline <i>M</i> (<i>SD</i>)	Immediate Post- Intervention <i>M</i> (<i>SD</i>)	1 Month Post- Intervention <i>M</i> (<i>SD</i>)	Effect Size ^a (<i>d</i>)
Health Beliefs	87.9 (14.92)	83.6 (12.93)	80 (9.4)	0.65
BSE Knowledge	4.4 (1.51)	6.0 (1.00)	5.6 (1.39)	0.82
Cancer Knowledge	4.0 (2.12)	5.8 (1.26)	6.2 (0.44)	1.71
Confidence Level	2.2 (0.74)	2.6 (0.55)	2.6 (0.55)	0.63

^a Using baseline and 1-month post-intervention data with pooled *SD*

Table 6

One-Month Follow-Up Self-Report on Mammogram and BSE Activities (N=5)

BSE Activities	Number of Participants
Consistent BSE practice	5
More confident with BSE	4
Mammogram done	3 (2 = normal, 1 = suspicious mass)
Had appointment for mammogram/ clinical breast exam	1
Discussed BSE with friends	4
Read or sought more information regarding breast cancer and BSE	4
Behavior changes as a result of the program	3

Based on the results of the pilot study, adjustments were made in preparation for the dissertation study. The research design was changed to an experimental 2 group pre-test post-test design. The experimental design is considered the “most powerful method available for testing hypothesis of cause and effect relationships between variables, and it could yield the highest-quality evidence” (Polit and Beck, page 179). The limitation of residency in Harris and Fort Bend Counties was eliminated allowing a broader geographic location for participants. The questionnaires were revised and several more items were added such as years in the U.S., sources of health care information, barriers to screening activities, and income. These data will provide more information on the

sample's characteristics. Feedback from the participants regarding preferred time and date for the educational session helped to set the intervention date to a Sunday. Also, due to the low return rate for the follow up event from the pilot study, the follow up for the dissertation study was conducted via telephone.

For this study, the refined HBM scale (Champion, 1988) was used. This scale was translated into the Vietnamese language with permission from the original designer, Dr Champion. Ten experts who were health care providers and spoke and wrote fluently in the Vietnamese language established content validity and translation validity by using the process of back translation. The above internal consistency and reliabilities of the instrument were validated by Ho et al. in 2005 and also from the recent pilot study. The English and Vietnamese versions of the HBM scale are found in Appendices A and B.

Demographic Data Questionnaire

This questionnaire was designed by the researcher and was tested in the pilot study. As a result of the pilot study, several questions were added to this questionnaire. This questionnaire has a total of 16 questions regarding age, education level, marital status, religion, clinical breast exam and mammography practices, source of health information, current occupation, duration of U.S. residency, language spoken at home, and information on access or barriers to health care (Appendix C).

Follow-up Questionnaire

This questionnaire was also designed by the researcher and was tested in the pilot study. There are 8 items in this questionnaire related to confidence level in practicing

BSE, post-intervention BSE practices, clinical breast exam, mammogram activities, and health information seeking activities (Appendix D).

Data Collection

After approval from the institutional review board, Vietnamese American women were recruited for the study via community flyers and radio announcements. The flyers, printed in both English and Vietnamese, were distributed 2 weeks prior to the educational intervention. Flyers were distributed at various places frequented by Vietnamese American women such as churches, temples, grocery stores, and community centers. Additionally, daily radio announcements were broadcast 2 times per day on a Vietnamese radio station located in the Houston area. The radio announcements began 2 weeks prior to the educational intervention. The data collection date was set for a Sunday as Vietnamese Americans tend to prefer Sunday for these type of events unrelated to work or school.

On the day of the educational intervention, signs were posted outside and inside the community center announcing the times of the sessions. There were three educational sessions scheduled throughout the day, 9:00 AM, 11:00 AM, and 1:00 PM, to provide more flexibility to the participants and enhance sample size. As participants entered the community center, they were escorted to a room where the researcher explained the purpose of the study. Inclusion criteria for the study were that the woman was 18 years of age or older and self-identified as Vietnamese American. Women who did not meet the inclusion criteria were given educational materials on breast health and BSE. The

researcher informed these women that they could return in 3 months for a general educational session on breast health.

Women who met inclusion criteria were informed that they would be randomized into either the experimental or control group after completing informed consent and the baseline instruments. The informed consent was written in both the Vietnamese and English languages. All data collection instruments were written in the Vietnamese and English languages. Once informed consents were signed, the HBM Scale instrument and the demographic data questionnaire were distributed to the participants. Two trained female assistants and the researcher were present to assist with any questions. The assistants and the researcher were fluent in both English and Vietnamese. Any questions regarding the clarity of the instrument were answered. After the baseline data were obtained, the participants were randomized to either the experimental group or the control group using a table of random numbers. Participants were randomized to either the experimental group or the control group. The control group received a brochure on general health issues. The control group was offered the opportunity to return to the community center in three months to attend a breast cancer educational session. All participants, in the control and experimental group, received an incentive of a \$10 gift card at the end of the baseline data collection and at the end of the study, 3 months later, after they answered the follow up questionnaires.

The experimental group remained in the community center for the educational session. The educational intervention was based on the cancer screening guidelines of the American Cancer Society (ACS) and followed the ACS structure with teaching material

available in Vietnamese or English (ACS, 2006). The educational intervention was tailored to meet the culturally sensitive needs of the Vietnamese American population. The researcher conducted the educational intervention as a Vietnamese American woman who is also an oncology nurse specialist. The researcher utilized culturally appropriate educational aids and linguistically appropriate translation instruments. Additionally, serving Vietnamese refreshments and the use of culturally appropriate greetings, words, and body language enhanced the learning environment.

The educational session began with a didactic part, presented in the Vietnamese language using a slide presentation presented by the investigator. A breast examination was demonstrated using the Health Edco soft breast plastic model. Each participant was given a small breast model to practice with and to take home after the educational session. Additional written educational materials on breast cancer, BSE, clinical breast exams, and mammography were also distributed to each participant. A \$10 gift card was given to each participant at the end of the session. The participants left the community center and the researcher contacted each participant via telephone approximately 3 months after the educational session. The participants completed the same HBM Scale instrument along with the follow-up questionnaire. Another \$10 gift card was mailed to the participants at the end of the study. This protocol was repeated 3 times during the one day of the study at 9:00 AM, 11:00 AM, and 1:00 PM.

Treatment of Data

The software SPSS version 13.0 was used for data management and analysis. Descriptive statistics appropriate to the level of measurement were calculated for the

demographic data. Chi-square and one-way analysis of variance (ANOVA) evaluated mean differences between and within the two groups. The level of significance for this study was set at $\alpha = .05$.

CHAPTER 4

ANALYSIS OF DATA

The purpose of this study was to test a culturally appropriate and culturally sensitive educational intervention on breast cancer screening and early detection health beliefs and practices among a group of Vietnamese women. Descriptive statistics appropriate to the level of measurement were calculated for the demographic data. A one-way analysis of variance (ANOVA) along with descriptive statistics and chi-square statistics were used to evaluate the mean differences between and within the control and experimental groups before and after the intervention. The level of significance for this study was set at $\alpha = .05$. Socio-economic description of the samples and the findings of the 7 research hypotheses will be presented in this chapter.

Description of the Sample

There were a total of 145 eligible women who came to the community center on the day of data collection (Figure 1). These women were recruited at one of 3 separate sessions that were held on the day of the educational intervention. On the day of the intervention, there were 13 women who were eligible for the study but withdrew for reasons such as inability to complete the questionnaires due to fatigue, lack of time, work schedule, and intentionally attempted to attend the educational session (Table 7). There was no attrition from the experimental group on the day of the intervention. The total final sample at baseline data collection was 132 participants with 59 women randomized

to the control group and 73 women randomized to the experimental group. At the 3-month follow up, the attrition rate was 28.8% with a total of 38 participants ($n = 18$ for control group; $n = 20$ for experimental group) who were lost to follow up for various reasons (Table 8). The final sample included 94 women who had completed the baseline and 3-months follow-up questionnaires. A summary of the flow of the participants in the study is presented in Figure 1.

Table 7

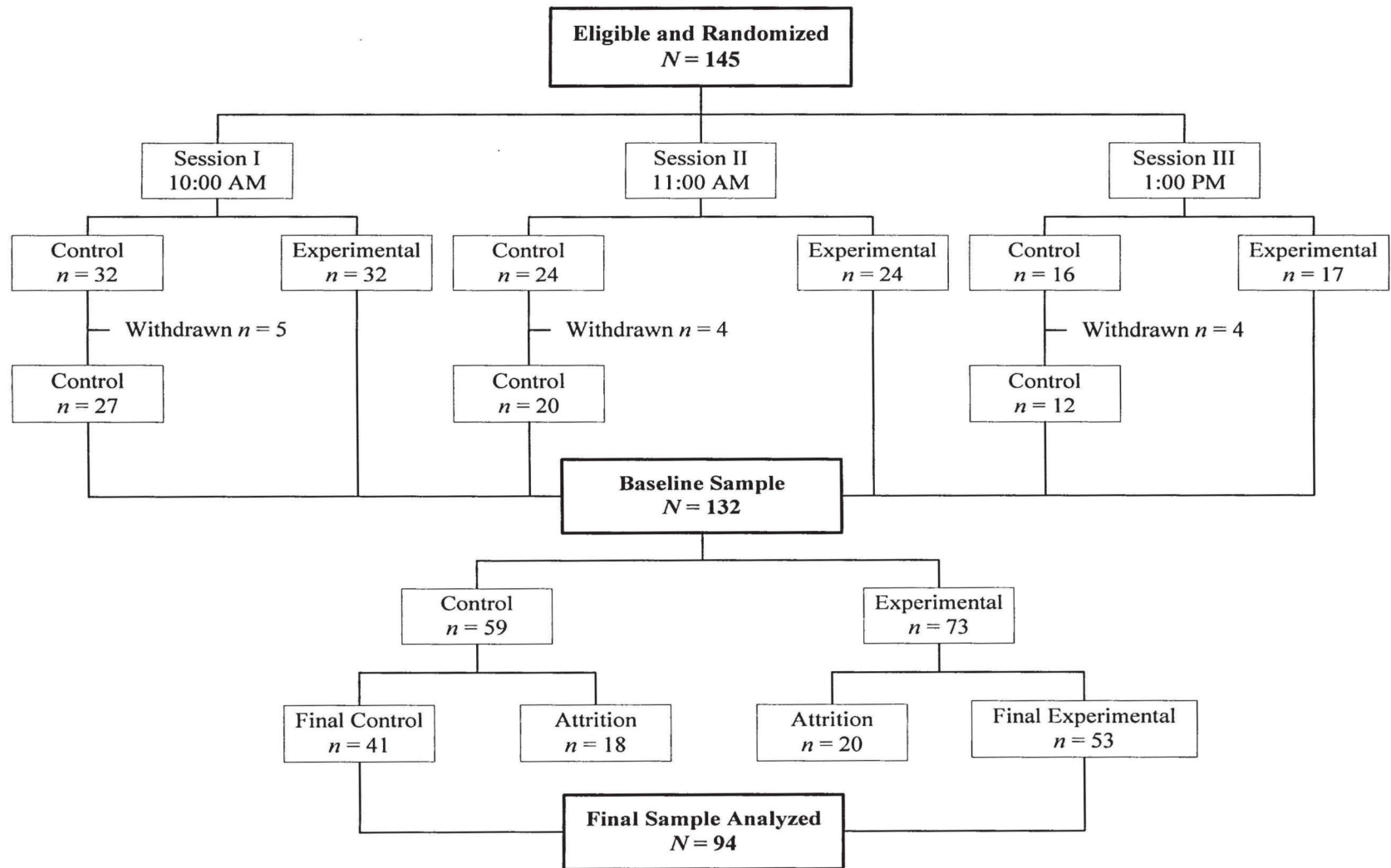
<i>Reasons for Attrition in the Control Group during Baseline Data Collection (N=13)</i>		
Control Group	Reason(s)	<i>n</i>
Session 1	Fatigue	2
	Attempted to attend treatment class	2
	Left before completing baseline data	1
Session 2	Left before completing baseline data	4
Session 3	Left before completing baseline data	4
		13

Table 8

<i>Reasons for Lost to Follow-up at 3 Months Post Intervention (N=38)</i>		
Group	Reason(s)	<i>n</i>
Control Group	Do not want to continue in study	4
	Not able to make contact after 3 or more phone call attempts; lost contact	14
Experimental Group	Went out of country	3
	Not able to make contact after 3 or more phone call attempts; lost contact	17
Total		38

Figure 1.

The Flow of the Participants from Baseline to 3 Months Post Intervention



Socioeconomic Status Characteristics of the Samples

Due to data collection occurring over 3 sessions and 3 different times of the day, the demographic data was analyzed first by session time and then by total groups (control and experimental). This analysis was performed in order to determine if there were any differences between the participants in the 3 sessions as well as if there were any differences between the control and experimental groups.

Age

For the experimental group, the participants' ages ranged from 22 to 83 years ($n = 73$), with a mean of 59.4 years ($SD = 14.4$). This group was further subdivided according to the sessions to determine if there were any differences in age among the 3 sessions. For session 1 (9:00AM), the ages ranged from 38 to 79 years with a mean of 54.3 years ($SD 11.6$). For session 2 (11:00AM), the ages ranged from 32 to 83 years with a mean of 52.6 years ($SD 12.4$). For session 3 (1:00PM), the ages ranged from 22 to 65 years with a mean of 45.4 years ($SD 14.2$).

For the control group ($n = 59$), the ages of the participants ranged from 23 to 80 years ($SD=14.06$). In session 1, the ages ranged from 25 to 80 years with a mean of 49.8 years ($SD 14.6$). For session 2, the ages ranged from 23 to 68 years with a mean of 49.4 years ($SD 11.6$). For session 3, the ages ranged from 24 to 77 years with a mean of 53.2 years ($SD 16.6$). A one-way ANOVA was used to calculate the mean differences between these 3 sessions in regard to age yielding a $F(2,129) = 0.66$ with $p = 0.52$, indicating there were no statistical difference among the 3 sessions in the groups in respect to the age. A one-way ANOVA was also calculated to determine if there were any differences between

the control and experimental groups in respect to the age variable. Results indicated there were no significant differences between the control and experimental groups with $F(1,129) = 0.34, p = 0.56$ in respect to age (Table 9).

Table 9

Age Distribution among the 3 Sessions and the Treatment and Control Groups

Session	Mean (SD)	<i>F</i>	<i>p</i>
Session #1			
Control (<i>n</i> = 27)	49.8 (14.6)	$F(2,129) = 0.66$	$p = 0.52$
Experimental (<i>n</i> = 31) ^a	54.3 (11.6)		
Session #2			
Control (<i>n</i> = 20)	49.4 (12.1)		
Experimental (<i>n</i> = 24)	52.6 (12.4)		
Session #3			
Control (<i>n</i> = 12)	53.2 (16.6)		
Experimental (<i>n</i> = 16) ^a	45.4 (14.2)		
Groups			
Control (<i>n</i> = 59)	59.4 (14.4)	$F(1,129) = 0.33$	$p = 0.56$
Experimental (<i>n</i> = 71)	51.6 (12.8)		
Total sample <i>N</i> = 130	51.01 (13.34)		

^a 2 women in the experimental group refused to give age

Marital Status

For the women in the experimental group, session 1, 46.9% reported being married, 25% were widowed, 21.9% were single, and 6.3% were divorced. For session 2, 62.5% were married, 12.5% were single, 12.5% were widowed, and 4.2% were divorced. In session 3, 52.9% reported being married, 29.4% were single, and 5.9% were widowed. There was no report of divorce in this group.

For the women in the control group, session 1, 66.7% reported being married, 14.8% were single, 11.1% were divorced, and 7.4% were widowed. For session 2, 60% reported being married, 25% were single, 10% were widowed, and 5% were divorced. The mean differences among the 3 sessions of the 2 groups were evaluated using the chi-square statistic, yielding a $\chi^2(3, N = 128) = 1.9, p = 0.59$. This indicated that there were no significant differences among the women in the 3 sessions. A one-way ANOVA was used to further evaluate the mean differences between the 2 groups with respect to marital status. Results, $(F(1,126) = .94, p = .33)$, indicated there were no statistical significant differences between the control and experiment groups (Table 10).

Educational Level

For the treatment group, the majority of the participants in all 3 sessions reported a high school education. Ten women reported having some college or a college degree. For the control group, the majority of the women reported having a high school education and 11 women reported having some college or college/advanced degree. A one-way ANOVA was used to determine any mean differences among the women in the 3 sessions, yielding $F(7,129) = 5.54$, and $p = 0.59$. This indicated there was no significant mean difference among the women. To further evaluate any differences between the 2 groups, a one-way ANOVA was calculated yielding $F(1,129) = 1.35, p = 0.25$. These results indicated there was no statistical difference between the control and treatment groups. A summary of the distribution of the educational levels between the 2 groups is located in Table 11.

reported having an annual income below \$20,000. Twenty two percent of the women in this group ($n = 22$) reported having an annual income from \$20,001 to \$40,000. There was one woman in each group who reported having an income greater than \$75,000 annually. Chi-square analysis indicated that there was no statistical significant differences among the 3 sessions, $\chi^2(4,96) = 4.16, p = 0.38$ as well as between the control and treatment group $F(1,95) = 2.5, p = 0.12$. The income level distributions among the 3 sessions in the control and treatment groups are detailed in Table 12.

Personal and Family History

For the treatment group, 2 of the women (3%) reported having a history of breast cancer, 1 had a history of breast lump, and 1 of calcification. Five women in the control group reported having had cysts in their breasts (9.8%) and 2 (4%) reported of having a history of breast lumps. Various treatments were used such as chemotherapy, surgery or lumpectomy, fine needle aspiration, Tamoxifen, herbal medicine, and some type of cream. Four of the women in the treatment group (6%) reported having a mother, sister, or daughter with breast cancer. Three women (5%) in the control group reported having sisters and a paternal grandmother with breast cancer.

Religion

Ninety-four participants responded to this question. Fifty two percent of the participants in the control group were Buddhist ($n = 21$), 35% were Catholic, and 10% were ancestor worshipers. In the treatment group, there were 39.6% ($n = 21$) of the women who reported being Catholic while the other 39.6% ($n = 21$) of the women reported being Buddhist. There were 13.2% ($n = 7$) of the participants in this group who

reported being ancestor worshipers. There was no significant difference between control and experiment group in respect to religion when chi-square analysis was performed $\chi^2(3, N = 94) = 2.25, p = 0.52$. A summary of the religion distribution among control and treatment groups can be seen in Table 13.

Table 11

Educational Level Distribution Among Treatment and Control Groups

		Percentage (n)			F	p
		Session I	Session II	Session III		
Control Group	None	3.7(1)	0	0	$F(7, 129) = 5.54$	0.59
	1st - 8th grade	18.5(5)	5(1)	17(2)		
	8th - 12th grade	25.9(7)	40(8)	58.3(7)		
	High school					
	Graduate	22.2(6)	30(6)	17(2)		
	Technical / Vocational	3.7(1)	10(2)	0		
	Some College	3.7(1)	0	12(1)		
	College Degree	14.8(4)	15(3)	0		
	Advanced Degree	7.4(2)	0	0		
Experimental Group	None	9.4 (3)	0	0	$F(1,129) = 1.35$	0.25
	1st - 8th grade	18.8 (6)	25 (6)	0		
	9th - 12th grade	34.4 (11)	33.3(8)	41.2(7)		
	High school					
	Graduate	9.4 (3)	29.2(7)	23.5(4)		
	Technical / Vocational	9.4 (3)	4.2(1)	4.2(1)		
	Some College	6.5(2)	4.2(1)	11.8(2)		
	College Degree	6.5(2)	4.2(1)	11.8(2)		
Total	N = 129					
Control	n = 59	30 ^a	24	16 ^a		
Treatment	n = 70					

^a 3 women in the control group did not answer the educational level question

Table 12

Income Level Distribution for Control and Treatment Groups

		Percentage (n)			X^2 and F	p
		Session I	Session II	Session III		
Control Group	< \$ 20000	44.4(12)	75(15)	29.5(5)	$X^2(4, N = 97)$ = 4.16	$p = .38$
	\$ 20001 – \$ 40000	25.9(7)	5(1)	18(3)		
	\$ 40001 – \$ 50000	3.7(1)	10(2)	6(1)		
	\$ 50001 – \$ 75000	3.7(1)	0	0		
	> \$ 75000	3.7(1)	0	0		
Experimental Group	< \$ 20000	46.9(15)	62.5(15)	52.9(9)	$[F(1, 95) = 2.5]$	$p = .12$
	\$ 20001 – \$ 40000	12.5(4)	12.5(3)	0		
	\$ 40001 – \$ 50000	3.1(1)	0	0		
	> \$ 75000	0	0	5.9(1)		
Total Sample $N = 97^a$						
Control $n = 49^a$						
Treatment $n = 48^a$						

^a 25 women in treatment group and 10 women in control group, did not report their income level

Table 13

Religion Distribution among Control and Experimental Groups

	Percentage (n)		X^2	&	p
	Control Group	Experimental Group			
Catholic	35.0 (14)	39.6 (21)	$X^2(3, N = 93) = 2.25$	$p = .52$	
Buddhist	52.5 (21)	39.6 (21)			
Protestant	2.5 (1)	7.5 (4)			
Ancestor Worshipping	10.0 (4)	13.2 (7)			
	43.0 (40 ^a)	57.0 (53)			
Total N=	40	53			

^a 1 woman in the Control Group did not respond to this question.

Language Spoken at Home

There were 97.6% ($n = 40$) of the participants in the control group and 94.3% ($n = 50$) participants in the treatment group who reported speaking Vietnamese language at home. There were 2 participants in the treatment group and 1 participant in the control group who reported speaking English at home. One woman reported speaking the Chinese Vietnamese language at home (Table 14). There was no significant difference between the control and treatment groups in respect to language spoken at home [$X^2 = (2, N = 94) = .93, p = 0.63$].

Table 14

Language Distribution among Control and Treatment Groups

	Percentage (n)		χ^2	&	p
	Control Group	Experiment Group			
Vietnamese	97.6 (40)	94.3 (50)	$\chi^2 = (2, N = 94) = 93$		$p = .63$
English	2.4 (1)	3.8 (2)			
Others	0	1.9 (1)			
Total	43.6 (41)	56.4 (53)			

Due to 38 participants being lost to follow-up at the 3 months point, a statistical calculation was computed in regard to socioeconomic status for the 94 samples who had completed the study. There was no statistically significant difference between the 2 groups with the 94 samples (Table 15).

In summary, there were no significant differences between the participants in the 3 sessions, and between the treatment and control groups. A typical participant was a married woman with an age around 50 years old, who had a high school education, was Buddhist or Catholic, and spoke Vietnamese at home.

Table 15

Demographic Data of 94 Participants at Baseline

	Control	Experimental	<i>F</i> and X^2	<i>p</i>
Age	<u><i>M</i> (<i>SD</i>)</u> <i>n</i> = 41 51.7 (13.1)	<u><i>M</i> (<i>SD</i>)</u> <i>n</i> = 53 51.75 (11.3)	$F(1, 91) = .02$.90
Marital Status	%(<i>n</i>)	%(<i>n</i>)		
Married	58.5 (24)	64.0 (32)	$X^2(3, N = 91) = 2.6$.45
Divorced	9.8 (4)	2.0 (1)		
Widowed	12.2 (5)	12.0 (6)		
Single	19.5 (8)	22.0 (11)		
Yearly Income				
0-\$20000	62.2 (23)	80.6 (29)	$X^2(4, N = 73) = 3.8$.45
\$20001-\$40000	27.0 (10)	13.9 (5)		
\$40001-\$50000	5.4 (2)	2.8 (1)		
\$50001-\$75000	2.7 (1)	0		
More than \$75000	2.7 (1)	2.8 (1)		
Religion				
Catholic	35.0 (14)	39.6 (21)	$X^2(3, N = 93) = 2.3$.52
Buddhist	52.5 (21)	39.6 (21)		
Protestant	2.5 (1)	7.5 (4)		
Ancestor Worshipping	10.0 (4)	13.2 (7)		
Language at Home				
Vietnamese	97.6 (40)	94.3 (50)	$X^2(2, N = 94) = .9$.63
English	2.4 (1)	3.8 (2)		
Other	0	1.9 (1)		
Education Level				
None	2.4 (1)	3.9 (2)	$X^2(7, N = 94) = 7.5$.38
1 st -8 th	17.1 (7)	15.7 (8)		
9 th - 11 th	39.0 (16)	39.2 (20)		
High school Grad	19.5 (8)	15.7 (8)		
Technical/Vocational	7.3 (3)	9.8 (5)		
Some College	0	9.8 (5)		
College Degree	9.8 (4)	5.9 (3)		
Advanced Degree	4.9 (2)	0		

Findings

Hypothesis 1: A Significant Change in Health Beliefs Regarding Breast Cancer

The first research hypothesis stated that there would be a significant change in health beliefs regarding breast cancer among the participants 3 months after the intervention as scored by the HBM scales. The HBM Scales were divided into 5 components or sub-scales: perceived seriousness of breast cancer, perceived susceptibility to this disease, perceived barrier to BSE, perceived benefit, and health motivation. Each answer was scored and tabulated according to the 5 sub-scales. The scores of the perceived seriousness of breast cancer and the perceived susceptibility were recoded due to the reversed value of the scaled answers.

Perceived Seriousness of Breast Cancer

At baseline, for the control group, the perceived seriousness of breast cancer disease had a mean of 23.1 ($SD = 6.2$), with scores ranging from a minimum of 14 to a maximum of 57. For the experimental group, the perceived seriousness of breast cancer had a mean of 22.4, ($SD = 6.4$) with the same range of minimum and maximum scores. A one-way analysis of variance was conducted to evaluate the differences in the perceived seriousness of breast cancer at baseline between the control and experimental groups. There was no significant difference between the experimental and control groups at baseline with respect to perceived seriousness of breast cancer, [$F(1,91) = 0.30, p = 0.59$].

Post intervention, the control group had a mean score of 25.9 ($SD = 6.6$.) and the experimental group had a mean of 22.1 ($SD = 4.6$). A one-way analysis of variance was

conducted to evaluate the differences of the perceived seriousness of breast cancer post educational intervention between the control and experimental group. There was a significant difference between the experimental and control groups post intervention with respect to perceived seriousness of breast cancer [$F(1,91) = 11, p < 0.01$]. The strength of relationship between the educational intervention and the change in perceived seriousness of breast cancer disease, as assessed by η^2 , was medium, with the educational intervention accounting for 11 % of the variance of the perceived seriousness of breast cancer. Compared with the experimental group, the control participants were more likely to report greater perceived seriousness of breast cancer.

A one-way analysis of variance was conducted to evaluate the differences of the perceived seriousness of breast cancer within the control group at pre and post intervention. There was a significant mean difference within this group [$F(1,80), p = 0.05$]. The change in perceived seriousness of breast cancer disease, as assessed by η^2 , was small. A one-way analysis of variance was conducted to evaluate the difference of the perceived seriousness of breast cancer within the experimental group at pre and post intervention. There was no significant mean difference within this group found [$F(1,104), p = 0.77$]. A summary of these findings can be found in Table 16. Reliability testing using Cronbach's alpha was calculated for the sub-scale perceived seriousness of breast cancer and was .60.

Perceived Susceptibility to Breast Cancer

At baseline, for the control group, the perceived susceptibility of breast cancer disease had a mean of 16.8 ($SD = 4.25$), with scores ranging from a minimum of 6 to a

maximum of 15. For the experimental group, the perceived susceptibility of breast cancer had a mean of 14.3, ($SD = 3.6$) with a minimum score of 5 and a maximum score of 25. A one-way analysis of variance was conducted to evaluate the differences in the perceived susceptibility of breast cancer at baseline between the control and experimental group. There was a significant difference between the experimental and control groups at baseline with respect to perceived susceptibility to breast cancer, [$F(1,92) = 9.30, p = 0.003$]. The control group was more likely to perceive themselves at risk for breast cancer.

Post intervention, the control group reported a mean of 17.7 ($SD = 5.4$.) and the experimental group reported a mean of 15.9 ($SD = 4.7$). A one-way analysis of variance was conducted to evaluate the differences of the perceived susceptibility to breast cancer post educational intervention between the control and experimental groups. There was no significant difference between the experimental and control groups post intervention with respect to perceived susceptibility to breast cancer, [$F(1,92) = 2.9, p < 0.09$]. A one-way analysis of variance was conducted to evaluate the differences of the perceived susceptibility to breast cancer post educational intervention within the control group. There was no significant difference found within the control group post intervention with respect to perceived susceptibility of breast cancer, [$F(1,80) = .82, p = 0.37$]. A one-way analysis of variance was conducted to evaluate the differences of the perceived susceptibility to breast cancer post educational intervention within the experimental group. There was a significant difference within the experimental group post intervention with respect to perceived susceptibility to breast cancer, [$F(1,104) = 4.26, p = 0.04$]. A

summary of the findings can be found in Table 16. Reliability testing using Cronbach's alpha was calculated for the sub-scale perceived susceptibility of breast cancer and was .66.

Perceived Barrier to Breast Self Examination

At baseline, for the control group, the perceived barrier to BSE had a mean of 22.2 ($SD = 3.8$) while the experimental group had a mean of 21.4, ($SD = 3.8$). A one-way analysis of variance was conducted to evaluate the differences of the perceived barrier to BSE at baseline between the control and experimental group. There was no significant difference between the experimental and control groups at baseline with respect to perceived barrier to BSE, [$F(1,92) = 1.02, p = 0.31$].

Post intervention, the control group had a mean of 24.6 ($SD = 2.4$.) and the experimental group had a mean of 25 ($SD = 1.56$). A one-way analysis of variance was conducted to evaluate the differences in the perceived barriers to BSE post educational intervention between the control and experimental groups. There was no significant difference between the experimental and control groups post intervention with respect to perceived barriers to BSE [$F(1,92) = 1.39, p = 0.24$].

A one-way analysis of variance was conducted to evaluate the differences of the perceived barriers to BSE post educational intervention within the control group. There was a significant difference within the control groups post intervention with respect to perceived barriers to BSE [$F(1,80) = 11.07, p = 0.001$]. A one-way analysis of variance was conducted to evaluate the differences of the perceived barriers to BSE post educational intervention within the experimental group. There was a significant

difference found within the experimental group post intervention with respect to perceived barriers to BSE, [$F(1,104) = 42.13, p = 0.000$]. A summary of the findings can be found in Table 16. Reliability testing using Cronbach's alpha was calculated for the sub-scale perceived barrier to BSE and was .53.

Perceived Benefit of Breast Self Examination

At baseline, for the control group, the perceived benefit of performing BSE had a mean of 21.05 ($SD = 3.2$) and the experimental group had a mean of 20.2 ($SD = 3.5$). A one-way analysis of variance was conducted to evaluate the differences in the perceived benefit of performing BSE at baseline between the control and experimental groups. There was no significant difference between the experimental and control groups at baseline with respect to perceived benefit of performing BSE [$F(1,92) = 1.45, p = 0.23$].

Post intervention, the control group had a mean of 18 ($SD = 3.4$.) and the experimental group had a mean of 20 ($SD = 2.6$). A one-way analysis of variance was conducted to evaluate the differences in the perceived benefit of performing BSE post educational intervention between the control and experimental group. There was a significant difference between the experimental and control groups post intervention with respect to perceived benefit of performing BSE [$F(1,92) = 11, p < 0.01$]. The strength of relationship between the educational intervention and the change in perceived benefit of performing BSE, as assessed by η^2 , was medium, with the educational intervention accounting for 11 % of the variance of the perceived benefit of performing BSE. Compared with participants in the control group, the participants in the experimental group were more likely to report higher perceived benefit of performing BSE.

A one-way analysis of variance was conducted to evaluate the differences in the perceived benefit of performing BSE post educational intervention within the control group. There was a significant difference within the control group post intervention with respect to perceived benefit of performing BSE [$F(1,80) = 18.16, p < 0.001$]. A one-way analysis of variance was conducted to evaluate the differences in the perceived benefit of performing BSE post educational intervention within the experimental group. There was no significant difference within the experimental group post intervention with respect to perceived benefit of performing BSE [$F(1,104) = .10, p = .75$]. A summary of these findings can be found in Table 16. Reliability testing using Cronbach's alpha was calculated for the subscale perceived benefit of performing BSE was .73.

Health Motivation

At baseline, for the control group, the health motivation subscale had a mean of 25.2 ($SD = 3.2$) while the experimental had a mean of 24.14, ($SD = 4.7$). A one-way analysis of variance was conducted to evaluate the differences in the health motivation at baseline between the control and experimental groups. There was no significant difference between the experimental and control groups at baseline with respect to health motivation [$F(1,92) = 1.79, p = 0.18$].

Post intervention, the control group had a mean of 26.7 ($SD = 8$) and the experimental group had a mean of 25.4 ($SD = 3.5$). A one-way analysis of variance was conducted to evaluate the differences in the health motivation post educational intervention between the control and experimental groups. There was no significant

difference between the experimental and control groups post intervention with respect to health motivation [$F(1,92) = 1.17, p = 0.28$].

A one-way analysis of variance was conducted to evaluate the differences in the health motivation post educational intervention within the control group. There was no significant difference within the control group post intervention with respect to health motivation [$F(1,80) = 1.14, p = 0.29$]. A one-way analysis of variance was conducted to evaluate the differences in the health motivation post educational intervention within the experimental group. There was no significant difference within the experimental group post intervention with respect to health motivation [$F(1,104) = 2.46, p = 0.12$]. A summary of the findings can be found in Table 16. Reliability testing using Cronbach's alpha was calculated for the subscale health motivation and was .35.

Table 16

Mean Scores of Health Beliefs Pre and Post Intervention

Health Belief Model Scales	Control Group		Experimental Group		<i>F</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Perceived Seriousness						
Pre Intervention	23.2	6.2	22.4	6.4	$F(1,91) = 0.29^a$	.59
Post Intervention	25.9	6.6	22.1	4.5	$F(1,92) = 11.01^a$ $F(1,80) = 4.05^c$ $F(1,104) = 0.09^e$	.001 .05 .77
Perceived Susceptibilities						
Pre Intervention	16.8	4.3	14.3	3.6	$F(1,92) = 9.34^a$	.003
Post Intervention	17.7	5.4	15.9	4.7	$F(1,92) = 2.94^a$ $F(1,80) = 0.82^c$ $F(1,104) = 4.26^e$	.09 .37 0.04
Perceived Barriers to BSE						
Pre Intervention	22.2	3.8	21.4	3.7	$F(1,92) = 1.03^a$	.31
Post Intervention	24.6	2.41	25.0	1.6	$F(1,92) = 1.39^a$ $F(1,80) = 11.07^c$ $F(1,104) = 42.13^e$	.24 .001 .000
Perceived Benefits of BSE						
Pre Intervention	21.1	3.1	20.2	3.5	$F(1,92) = 1.45^a$	.23
Post Intervention	18.0	3.4	20.0	2.6	$F(1,92) = 11.04^a$ $F(1,80) = 18.16^c$ $F(1,104) = 0.10^e$	.001 .000 .75
Health Motivations						
Pre Intervention	25.2	3.2	24.1	4.7	$F(1,92) = 1.79^a$	.18
Post Intervention	26.7	8.0	25.4	3.5	$F(1,92) = 1.17^a$ $F(1,80) = 1.14^c$ $F(1,104) = 2.46^e$	.28 .29 .12

^a Between the groups^c Within the control group^e Within the experimental group

Hypothesis 2: An Increase in Breast Cancer Knowledge 3 Months after Intervention

The second hypothesis stated that there would be an increase in breast cancer knowledge at 3 months after the educational intervention. The scores from the 7 breast cancer knowledge questions were tabulated. At baseline, the control group had a mean of 3.4 ($SD = 1.43$) and the scores for the experimental group indicated a mean of 2.8 ($SD = 1.83$). A one-way analysis of variance was conducted to evaluate the differences in the breast cancer knowledge at baseline between and within the control and experimental groups. There was no significant difference between the control and experimental groups at baseline with respect to breast cancer knowledge [$F(1,87) = 3.49, p = 0.06$].

At 3-months post intervention, the control group reported a mean of 3.6 ($SD=1$) and the experimental group reported a mean of 3.9 ($SD = 1.32$). A one-way analysis of variance was conducted to evaluate the relationship between the educational intervention and the change in breast cancer knowledge scores 3 months after the educational intervention between the control and intervention groups. There was no significant difference in the mean breast cancer knowledge scores between the groups at 3-months post intervention [$F(1,91) = 1.7, p = 0.2$].

A one-way analysis of variance was conducted to evaluate the relationship between the educational intervention and the change in breast cancer knowledge scores 3 months after the educational intervention within the control group. There was no significant difference in the mean breast cancer knowledge scores within the control group at 3-months post intervention [$F(1,80) = .29, p = 0.59$]. A one-way analysis of variance was conducted to evaluate the mean change of the breast cancer knowledge 3

months after the educational intervention within the experimental group. There was a significant difference in the mean breast cancer knowledge scores within the experimental group at 3-months post intervention [$F(1,98) = 13.94, p = 0.000$]. The strength of relationship between the educational intervention and the change in breast cancer knowledge, as assessed by η^2 , was medium, with the educational intervention accounting for 13 % of the variance of the breast self exam knowledge scores. A summary of these findings can be found in Table 17. Reliability testing using Cronbach's alpha was calculated for the breast cancer knowledge and was .47.

Table 17

Mean Scores of Breast Cancer Knowledge Pre and Post Intervention

	Control Group		Experimental Group		<i>F</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Breast Cancer Knowledge						
Pre Intervention	3.4	1.43	2.8	1.49	$F(1,87) = 3.49^a$	.06
Post Intervention	3.6	1.00	3.9	1.32	$F(1,92) = 1.7^a$	.20
					$F(1,80) = .29^c$	.59
					$F(1,98) = 3.94^c$	.000

^a Between the groups

^c Within the control group

^e Within the experimental group

Hypothesis 3: An Increase in Breast Self Examination Knowledge 3 Months after Intervention

The third hypothesis stated that there would be an increase in BSE knowledge at three months after the educational intervention. The scores were tabulated from the 6 BSE knowledge questions. The questions of "Have you ever heard of BSE?" (question 9)

and “Do you know how to do BSE?” (question 10) were excluded from the analysis since they were statements rather than questions to measure BSE knowledge. At baseline, the control group mean score for the BSE knowledge were 2.5 ($SD = 1.47$). The experimental group had a mean of 2.1 ($SD = 1.40$). A one-way analysis of variance was conducted to evaluate the differences in the breast self-examination knowledge at baseline between and within the control and experimental groups. There was no significant difference between the control and experimental groups at baseline with respect to breast self examination knowledge [$F(1,91) = 1.07, p = 0.30$].

At 3-months post intervention, the control group reported a mean of 2.32 ($SD = 1.13$) and the experimental group reported a mean of 3.14 ($SD = 1.50$). A one-way analysis of variance was conducted to evaluate the relationship between the educational intervention and the change in breast self-examination knowledge 3 months after the educational intervention. There was a significant difference in the mean breast self-examination knowledge at 3-months post intervention [$F(1,92) = 8.45, p = 0.005$]. The strength of relationship between the educational intervention and the change in knowledge BSE, as assessed by η^2 , was medium, with the educational intervention accounting for 12 % of the variance of the breast self exam knowledge. Compared with the control group, the experimental group was more likely to report an increase in BSE knowledge.

A one-way analysis of variance was conducted to evaluate the relationship between the educational intervention and the change breast self-examination knowledge 3 months after the educational intervention within the control group. There was no

significant difference in the mean breast self-examination knowledge at 3-month post intervention within the control group [$F(1,79) = .21, p = .65$]. A one-way analysis of variance was conducted to evaluate the relationship between the educational intervention and the change breast self-examination knowledge 3 months after the educational intervention within the experimental group. There was a significant difference in the mean breast self-examination knowledge at 3-months post intervention within the experimental group [$F(1,101) = 12.19, p = 0.001$]. The strength of relationship between the educational intervention and the change in knowledge BSE, as assessed by η^2 , was medium, with the educational intervention accounting for 11 % of the variance of the breast self exam knowledge. A summary of the findings can be found in Table 18. Reliability testing using Cronbach's alpha was calculated for the BSE knowledge and was .50.

Table 18

Mean Scores of BSE Knowledge Pre and Post Intervention

	Control Group		Experimental Group		<i>F</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
BSE Knowledge						
Pre Intervention	2.5	1.47	2.1	1.40	$F(1,90) = 1.07^a$	.30
Post Intervention	2.3	1.13	3.1	1.50	$F(1,92) = 8.45^a$	.005
					$F(1,79) = 0.21^c$	.65
					$F(1,101) = 12.19^e$	.001

^a Between the groups

^c Within the control group

^e Within the experimental group

Hypothesis 4: An Increase in Confidence Level When Performing BSE

The fourth hypothesis stated there would be an increase in confidence level when performing BSE 3-months post intervention. The score of the confidence level when performing BSE were tabulated for each participant in the control and experimental group pre and post intervention. At base line, the women in the control group had a mean score of 1.97 ($SD = .73$) and the experimental group had a mean of 1.87 ($SD = .69$). A one-way analysis of variance was conducted to evaluate the mean differences in respect to the confidence level between the control and experimental groups at baseline. There was no significant difference in the mean breast self-examination confidence at baseline [$F(1,84) = 0.47, p = 0.50$].

At 3 months post intervention, the control group had a mean score of 1.87 ($SD = .75$) and the experimental group had a mean score of 2.27 ($SD = .66$). A one-way analysis of variance was conducted to evaluate the relationship between the educational intervention and the change in breast self-examination confidence 3 months after the educational intervention. There was a significant difference in the mean breast self-examination confidence at 3-months post intervention [$F(1,91) = 1.54, p = 0.009$]. The strength of relationship between the educational intervention and the change in confidence of BSE, as assessed by η^2 , was medium, with the educational intervention accounting for 7% of the variance of the breast self exam confidence level. Compared with the control group, the women in the experimental group were more likely to report an increase in their confidence level in performing BSE.

A one-way analysis of variance was conducted to evaluate the relationship between the educational intervention and the change in breast self-examination

confidence 3 months after the educational intervention within the control group. There was no significant difference in the mean breast self-examination confidence at 3-months post intervention [$F(1,79) = .35, p = 0.56$]. A one-way analysis of variance was conducted to evaluate the relationship between the educational intervention and the change breast self-examination confidence 3 months after the educational intervention within the experimental group. There was a significant difference in the mean breast self-examination confidence at 3-months post intervention [$F(1,96) = 8.61, p = 0.004$]. The strength of relationship between the educational intervention and the change in confidence of BSE, as assessed by η^2 , was medium, with the educational intervention accounting for 8% of the variance of the breast self exam confidence level. Since the confidence level question had only 1 item, reliability using Cronbach's alpha was not calculated. A summary of the findings and graphs demonstrating the changes is found in Table 19, Figure 2 and Figure 3.

Table 19

Mean Scores of BSE Confidence Level Pre and Post Intervention

BSE Confidence Level	Control Group		Experimental Group		<i>F</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Pre Intervention	2.0	.73	1.9	.69	$F(1,84) = .47^a$	.50
Post Intervention	1.9	.75	2.3	.66	$F(1,91) = 7.15^a$	.009
					$F(1,79) = 0.35^c$	.56
					$F(1,96) = 8.61^e$	.004

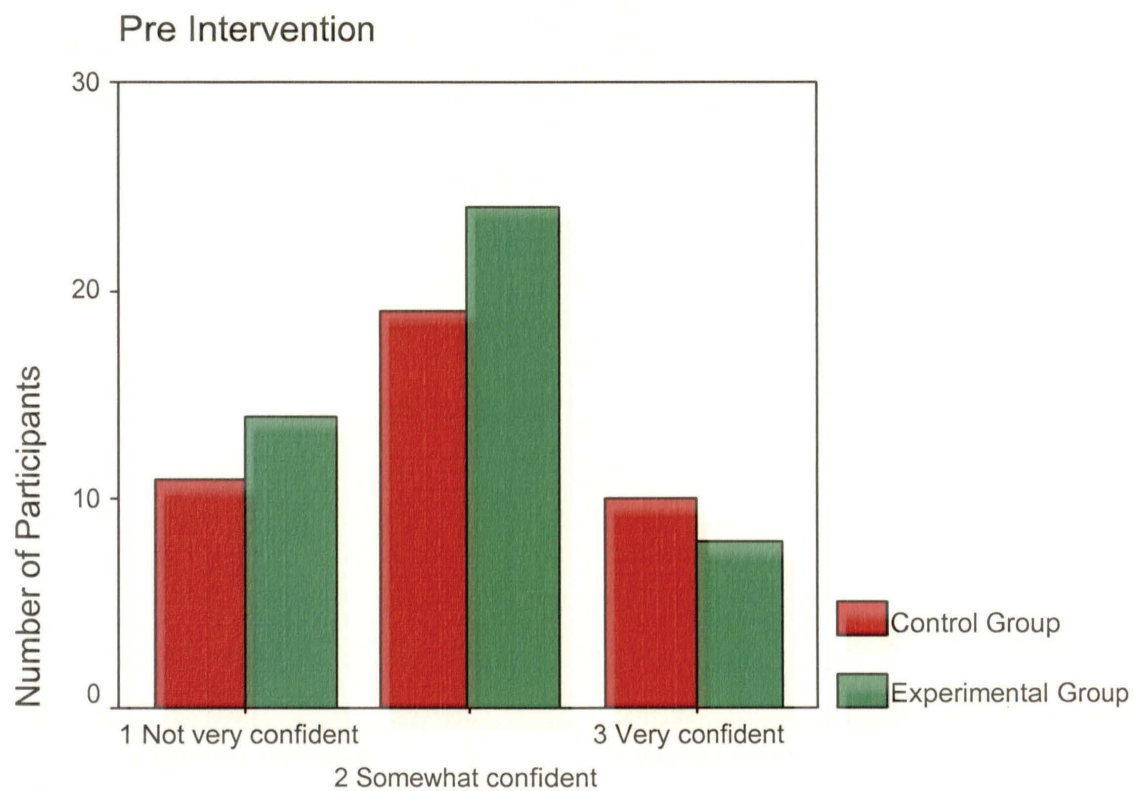
^a Between the groups

^c Within the control group

^e Within the experimental group

Figure 2

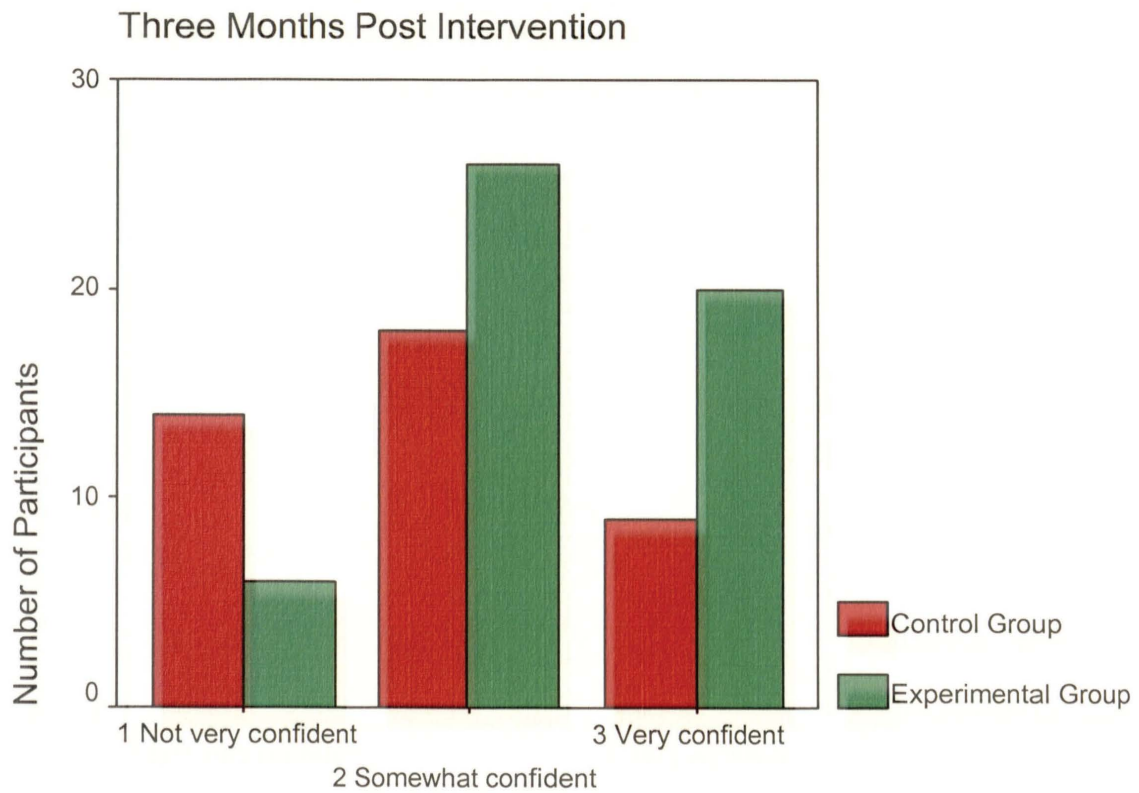
Pre-Intervention: Confidence Level When Performing BSE



How confident do you feel about your ability to BSE

Figure 3.

Post Intervention: Confident Level When Performing BSE



How confident do you feel about your ability to BSE

*Hypothesis 5: A High Self-Report of BSE Practice 3 Months after
the Educational Intervention*

The fifth hypothesis stated there would be an increase in BSE practice 3 months after the educational intervention. This item was measured using a self-report response from the participants. At baseline, in the control group, 34% ($n=14$) participants answered yes to the question of practicing BSE monthly versus 43% ($n=23$) of the participants in the experimental group from the total of 94 participants in both groups. A chi-square statistic was calculated to evaluate any difference in both groups at baseline. There was no significant difference between the control and treatment groups in respect to the monthly BSE practice at baseline [$\chi^2 = (1, N = 94) = 0.83, p = 0.36$].

At 3 months post intervention, the control group reported 28% of participants ($n=9$) were practicing monthly BSE while the experimental group reported 49% of participants ($n=26$) were practicing monthly BSE. A chi-square statistic was performed to evaluate any difference between the groups. There was a significant difference between the control and treatment groups in respect to the monthly BSE practice at 3 months post intervention [$\chi^2 = (1, N = 94) = 7.27, p = .007$]. A summary of the findings can be seen in Table 20.

Table 20

Percentage of BSE Practice at Baseline and 3 Months Post Intervention

BSE Practice	Control Group Percentage (n)	Experimental Group Percentage (n)	χ^2	p
Pre Intervention	34(14)	43(23)	$\chi^2 (1, N = 94) = .83$	0.36
Post Intervention	28(9)	49(26)	$\chi^2 (1, N = 94) = 7.27$	.007

*Hypothesis 6: A Higher Self-report of Mammogram Activities 3 Months after
the Educational Intervention*

To evaluate the mammogram activities 3-months post intervention, the practice patterns of mammography pre-intervention were assessed from the participants 40 years old and older. Seventy-three of the 79 participants who were 40 years old or older responded to the question, "Have you ever had a mammogram?" For the control group ($n=31$), 30 women (97%) responded yes. For the experimental group ($n=42$), 35 women (83%) responded yes. The chi-square statistic indicated there was no significant difference found between these 2 groups in respect to mammography practice pre-intervention [$\chi^2 (1, N = 73) = 3.30, p = .07$].

At three months post intervention, for the control group ($n=33$), six (18.2%) of the participants reported having a mammogram after the intervention. For the experimental

group ($n=41$), seven (17.1%) of the participants reported having a mammogram after the intervention. The chi-square statistic indicated there was no significant difference found between these 2 groups in respect to mammography practice post intervention [$X^2(1, N = 74) = 0.16, p = .90$]. A summary of the findings can be found in Table 21.

Table 21

Percentage of Mammogram at Baseline and 3 Months Post Intervention

BSE Practice	Control Group Percentage (n)	Experimental Group Percentage (n)	X^2	p
Pre Intervention	97(30)	83(35)	$X^2(1, N = 73) = 3.30$	0.07
Post Intervention	18.2(6)	17.1(7)	$X^2(1, N = 74) = 0.16$	0.90

Hypothesis 7: A Higher Self-report of Clinical Breast Examinations 3 Months after the Educational Intervention

The patterns of CBE practice pre-intervention were evaluated in all participants. For the control group, thirty-seven of the 41 participants (90%) reported ever having a CBE versus 38 of the 47 participants (81%) from the experimental group. There was no statistical difference between the 2 groups [$X^2(1, N = 88) = 1.53, p = 0.21$] in respect to the CBE practices.

Post intervention, there were 88 participants who responded to the question of “Did you have CBE during the 3 months post intervention?” For the control group, thirty-

seven of the 41 participants (90%) reported having a CBE during the 3 months post intervention versus 39 of the 47 participants (83%) from the experimental group. There was no statistical significant difference between the 2 groups [$X^2(1, N = 88) = .98, p = .32$] in respect to the CBE activity 3 months post intervention. A summary of the findings can be found in Table 22.

Table 22

Percentage of CBE at Baseline and 3 Months Post Intervention

CBE Practice	Control Group Percentage (<i>n</i>)	Experimental Group Percentage (<i>n</i>)	X^2	<i>p</i>
Pre Intervention	90(37)	81(38)	$X^2(1, N = 88) = 1.53$	0.21
Post Intervention	90(37)	83(39)	$X^2(1, N = 88) = 0.98$	0.32

Summary of the Findings

The analysis of the 5 components of health beliefs in regard to breast cancer, breast cancer screening, and BSE practices 3 months after the educational intervention indicated some differences between the control and intervention groups. The mean scores for the perceived seriousness of breast cancer had increased for the control group. There was a significant mean difference found between the experimental and control groups 3 months post intervention. Compared with the experimental group, the control group was more likely to report a higher perceived seriousness of breast cancer. The control group also reported to have a significant difference within its own group.

For the perceived susceptibility to breast cancer, pre intervention, there was a significant mean difference between the control and experimental groups. However, post intervention, there was no significant difference between the experiment and control groups. Both group mean scores were increased pre and post intervention but the controls were more likely to perceive more susceptible to breast cancer. There was a significant dereference found within the experimental group in respect to the susceptibility to breast cancer. For the perceived barrier aspect, there was no significant mean difference detected between the 2 groups at pre and at 3 months post intervention. However, there were significant differences found within both control and experimental groups.

For the perceived benefit aspect of the health model, there was a statistically significant mean difference detected between the 2 groups at 3 months post intervention with the education intervention having a medium effect, accounting for 11% of the variance of the perceived benefit of performing BSE. There was a difference within the control group. There was no significant difference found within the experimental group. For the health motivation aspect, although there was an increase in the mean scores for both control and experimental groups, there was no significant mean difference in these 2 groups at 3 months post intervention. There were no significant mean differences found in within both groups either.

Overall, most of the mean scores in the 5 subscales of the HBM scales had increased at 3 months post intervention, in both control and experimental groups. There were significant mean differences in perceived seriousness ($p = 0.001$) and perceived

benefit of BSE ($p = 0.001$) between the control and experimental groups post intervention. There was also a mean differences between the control and experimental group pre intervention in respect to perceived susceptibility aspect. When compared the mean differences pre and post intervention within the control group, there were significant differences found in perceived seriousness, perceived barriers, and perceived benefit components of the HBM. Within the experimental group, when compared the mean score differences pre and post intervention, significant differences were found in perceived susceptibilities and perceived barriers of BSE. The Cronbach's coefficient alpha ranged from 0.35 to 0.73 indicating this instrument was moderately reliable for this study sample.

Regarding the breast cancer knowledge changes after 3 months post intervention, analysis indicated there was no statistically significant mean difference detected both pre and post intervention for the 2 groups. However, there was a significant mean difference found within the experimental group in respect to breast cancer knowledge when compared the pre and post mean scores within this group.

The statistical analysis demonstrated there was a significant mean difference of BSE knowledge at 3-months post intervention between the control and experimental groups. The strength of the relationship between the education intervention and the change in knowledge of BSE was medium, with the education intervention accounting for 12% of the variance of the BSE knowledge. There was also a significant difference of BSE knowledge found when compared the pre and post intervention mean scores within

the experimental group. For the confidence level when performing BSE, post intervention, there was a significant mean difference between the control and experimental groups, with the educational intervention accounting for 7% of the variance of the BSE confidence level. There was also a significant difference of the level of confidence of BSE found within the experimental group when compared their mean scores pre and post intervention.

In relation to the increase in BSE practice 3-months post intervention, there was a statistically significant mean difference between the control and experimental groups. For the self-report of mammogram activity and CBE 3 months after the educational intervention, there was no statistically significant mean difference found between the 2 groups. However, the majority of the participants, who were 40 years old and older, in both control (88%) and experimental (86%) groups, reported that they had made appointments for mammograms. A summary of statistical findings of the 7 hypotheses 3 months post intervention can be found in table 23.

Table 23

Summary of Statistical Findings of the 7 Hypotheses Post Intervention

Hypotheses	Statistical Test	Findings
# 1 Health Beliefs	F- test	
Perceived Seriousness	-Between groups -Within groups	$F(1,91)=11, p<0.01$ Eperimental: $F(1,104)=0.09, p=.77$ Control: $F(1,80)=4.05, p=0.05$
Perceived Susceptibilites	-Between groups -Within groups	$F(1,92) = 2.94, p= 0.09$ Eperimental: $F(1,104)=4.26, p=.04$ Control: $F(1,80)=0.82, p=0.37$
Perceived Barriers	-Between groups -Within groups	$F(1,92) = 1.39, p= 0.24$ Eperimental: $F(1,104)=42.1, p=.000$ Control: $F(1,80)=11.07, p=0.001$
Perceived Benefits	-Between groups -Within groups	$F(1,92) = 11.04, p= 0.001$ Eperimental: $F(1,104)=0.10, p=.75$ Control: $F(1,80)=18.16, p=0.000$
Health Motivations	-Between groups -Within groups	$F(1,92) = 1.17, p= 0.28$ Eperimental: $F(1,104)=2.46, p=.12$ Control: $F(1,80)=1.14, p=0.29$
#2 Breast Cancer Knowledge	F Test	$F(1,92) = 1.7, p = 0.20$
	-Between groups -Within groups	Eperimental: $F(1,98)=3.94, p=.000$ Control: $F(1,80) = .29, p=0.59$
# 3 BSE Knowledge	F-Test	$F(1,92) = 8.45, p = 0.005$
	-Between groups -Within groups	Eperimental: $F(1,101) = 12.2, p = .001$ Control: $F(1,80) = .29, p=0.59$
# 4 Confidence Level	F-Test	
	-Between groups -Within groups	$F(1,91)= 7.15, p=.009$ $F(1,96) = 8.61, p=..004$
# 5 Higher Self-Report of BSE	Chi-square Between groups	$X^2(1, N = 94) = 7.27, p = 0.007$
# 6 Higher Self-Report of mammogram	Chi-square Between groups	$X^2(1, N = 74) = 0.16, p = 0.90$
# 7 Higher Self-report of CBE	Chi-square Between groups	$X^2(1, N = 88) = 0.98, p = 0.32$

CHAPTER 5

SUMMARY OF THE STUDY

Breast cancer is the most common cancer in Vietnamese women (McPhee, 2002).

They are often diagnosed with breast cancer at a younger age compared to the general U.S. population with about 50% of the women younger than 50 years of age at the time of diagnosis (Lin, Phan, & Lin, 2002), and at advanced stages, making optimal treatment difficult. Preventive and early detection practices are still considered an emerging concept for the Vietnamese population. Studying breast cancer screening behaviors of Vietnamese women will help health care professionals gain a better understanding of the health beliefs and practices so that early diagnosis through knowledge of prevention and detection measures can reduce the mortality rate (Ho et al, 2005).

The aim of this study was to test a culturally appropriate and culturally sensitive educational intervention on breast cancer screening and early detection health beliefs and practices among a group of Vietnamese women. The following 7 hypotheses were tested. Vietnamese women, age 18 years and older, who received a 1-hour breast health and breast cancer educational session provided at a Vietnamese community center by an oncology registered nurse would report: 1) a significant change in health beliefs regarding breast cancer; 2) an increase in breast cancer knowledge; 3) an increase in BSE knowledge; 4) an increase in confidence level when performing BSE; 5) an increase in BSE practice 3 months after the educational intervention; 6) a higher self-report of of

mammogram activity; and 7) a higher self-report of clinical breast examinations 3 months after the educational intervention compared to Vietnamese women who do not receive the educational intervention. The Health Belief Model (Becker, 1974) served as the main theoretical framework to guide the study. Since cultural sensitivity was a factor due to the targeted population being Vietnamese women who were mostly born and raised in Vietnam, components of Leininger's transcultural nursing theory (Leininger & McFarland, 2002) were incorporated into the design of the education intervention. This chapter includes a summary of the study, a discussion of the findings, study conclusions, implications, and recommendations for further study.

Summary

This was an experimental two-group pretest-posttest study designed to evaluate the effects of an educational intervention on breast cancer knowledge, breast cancer health beliefs, BSE knowledge, BSE practices and confidence levels, mammogram activities, and clinical breast exam with a group of Vietnamese American women living in Houston and its vicinity. The sample was recruited via flyers posted in areas frequented by the targeted population and by radio announcements. To enhance the sample size, the baseline data collection was scheduled on a Sunday with 3 consecutive sessions. After obtaining informed consent, the women were randomized to either the control or experimental group. The experimental group received an educational intervention that was conducted in the Vietnamese language and in a closed classroom. The researcher and her trained assistants provided hands-on practice and answered any

questions that the participants had regarding BSE, breast cancer information, and resources. Vietnamese refreshments were served on the baseline data collection day. After accounting for attrition during the baseline and 3 months post intervention data collection, the final sample size consisted of 94 women: 41 in the control group, and 53 in the experimental group. Data were compared among the women entered at the 3 separate sessions as well as compared between the control and treatment groups. There were no significant differences in the socio-economic data among the samples in the 3 sessions and between the 2 groups at baseline. The same HBM Scale instruments were used for pre and post intervention except for the addition of the follow-up questionnaire, which was used at the 3-month follow up to measure the self-report CBE and mammogram activities post intervention. The 3-month follow up was conducted via telephone over a 5-day period. The overall attrition rate was 28.8%. The main reason for attrition was inability to contact or locate the women. At least 3 attempts were made at various times on various days for all women in the study.

Baseline data for the dependent variables of the seven hypotheses were compared to determine if there were differences between the control and experimental groups. There were no significant differences between the control and experimental groups for all baseline measurements.

For hypothesis 1, significant differences between the experimental and control groups at 3-months post intervention were found in two of the 5 health belief subscales. The women in the control group reported higher scores in the perceived seriousness of

breast cancer. The women in the experimental group reported higher scores in perceived benefit of BSE. Significant differences within the control group at 3-month post intervention also found in perceived seriousness, perceived barrier, and perceived benefit of BSE. Significant differences within the experimental group at 3-month post intervention were also found in perceived susceptibility, and perceived barrier to BSE. Hypothesis 2 was supported by the study findings. There was a significant difference in the mean scores of the breast cancer knowledge found in the experimental group at 3-month post intervention although there were no significant differences between the two groups in breast cancer knowledge at 3-months post intervention. Hypotheses 3, 4, and 5 were supported by the data. At 3 months post-intervention, the women in the experimental group reported higher scores in BSE knowledge, a higher level of confidence when performing, and a higher self-report of BSE compared to the women in the control group. When compared the mean differences within the groups, the women in the experimental group reported significant differences at 3-month post intervention in those 3 areas while no significant differences were found in the control group. Hypotheses 6 and 7 were not supported by this study. There were no differences in self-report of mammogram activity or clinical breast exam between the women in the experimental and control groups as well as within the groups.

Discussion of the Findings

Differences in Health Beliefs Regarding Breast Cancer and BSE Knowledge

The significant differences, post intervention, found within the 4 subscales of the health beliefs scales, perceived seriousness, perceived susceptibility, perceived barriers, and perceived benefit of BSE, when compared between and within the 2 groups, had demonstrated that the educational intervention study had made an impact on both control and experimental groups. Post intervention, the women in the control group, when compared with the experimental group, had perceived that breast cancer was a serious disease and perceived that they are susceptible to breast cancer. When compared the mean differences within their own group, the results indicated that the participants in this group had perceived there are barriers to BSE, and had reported a significant difference in the mean scores of the perceived BSE between pre and post intervention.

For the experimental group, 3- month post intervention, this group had perceived less seriousness of the disease and had perceived a benefit of BSE when compared with the control group. The results of the comparison of the mean scores within the group showed that they had perceived a susceptibility to the disease, and had perceived barriers to BSE. This could be because of the effects of the intervention. The participants in this experimental group had perceived that they are susceptible to the disease, but perceived less seriousness when compared to the control group, because they know that with early screening and detection methods, the disease can be found early, thus the optimal treatment can be achieved. These findings are congruent with McGarvery's findings

(McGarvey et al, 2003). McGarvey and colleagues studied the health beliefs in regard to cancer screening practices in 3 groups of low-income Hispanic, Vietnamese, and Cambodian American women using the HBM as their theoretical framework. The Vietnamese and Hispanic American women reported a higher perceived seriousness of breast cancer (without intervention) when compared to the Cambodian American women. In terms of perceived susceptibility to breast cancer, the Vietnamese American women reported a less perceived susceptibility to the disease when compared with other cohort groups.

The findings in this current study with Vietnamese American women related to the perceived seriousness of the disease and the benefit of BSE also were supported by the findings in the Champion (1990) study. In this study, using the HBM as a theoretical framework, Champion studied 362 women to identify the correlation between the aspects of HBM and the frequency and the practice of BSE. High levels of perceived seriousness ($M=5.51$) and an increase of frequency of BSE at the 1-year follow-up were reported (Champion, 1990). The Vietnamese American participants in this current study reported a change in their perceived susceptibility to the disease at 3-months post intervention, indicating that they were less likely to be susceptible to breast cancer. This finding was also congruent with McGarvey's study (McGarvey et. al, 2003) as stated above. This finding could be a result of being exposed to the educational session and learning that even though breast cancer is a serious disease, if detected early, it could have favorable outcome thus, making women less susceptible to the disease.

The increase mean scores in both the control and experimental groups in most of the aspects of the health beliefs, although not statistically significant, also indicated emerging changes in their beliefs in respect to the preventive concept as indicated in another study (Ho, et al, 2005). In this study, Ho and colleagues investigated the perception of health in a group of Vietnamese Americans in a community center. The emergence of the preventive concept was noted via the participants' report of having annual check ups and mammography. For this current study, there were increased scores in the control group even though this group was not exposed to the educational intervention. However, just participating in the study, could raise a woman's awareness about the disease and the screening and early detection practices.

Breast Cancer Knowledge

The pre-intervention breast cancer knowledge scores in this sample of Vietnamese women were low indicating minimal knowledge of breast cancer and its screening and early detection practices. These findings are supported by previous results from other studies (Jenkins et al, 1990; Pham & McPhee, 1992; Phipps et al, 1997; Yi & Reyes-Gibby, 2002). These researchers found a consistently low level of breast cancer knowledge in Vietnamese American women. The findings at 3-month post intervention of the current study, when compared with the control group, indicated there was no difference between the control and experimental groups. This is also congruent with previous study findings (Nguyen, Vo, McPhee, & Jenkins, 2000), which reported there was no increase in breast cancer knowledge post intervention. In the 2000 study, the

researchers followed 2 groups (control and experimental) of Vietnamese women for two and a half years to study their behaviors in respect to their breast cancer knowledge and their adherence to early breast cancer screening recommendations after an education intervention. They found no significant changes in breast cancer knowledge post intervention. However, when compared the mean scores within the experimental group, the significant mean difference found indicated that there was knowledge gained after the intervention. This is in congruent with Yi and Luong (2005) study in 2005. This study reported a significant increase in breast cancer knowledge 5 months after an educational intervention in their study of Vietnamese American women living in low income apartment complexes. The control group also had a small increase in the mean score 3-month post intervention although this was not statistically significant. This could be due to the increase in awareness of breast cancer through the sample recruitment efforts (announcement on radio and flyers posting), or just simply having participated in the study, which could stimulate their interest in finding measures to help to detect this disease early.

Breast Self Examination Knowledge

For the pre intervention baseline, the 41% correct answers from the control and the 39% correct answers from the intervention group indicated a low level knowledge of BSE. These findings are congruent with previous studies (Champion, 1990; Hiatt et al, 1996; Ho et al, 2005; Yi & Luong, 2005). The post intervention results indicated there was a significant change in BSE knowledge from the experimental group with 54% mean

scores, and ANOVA result [$F(1,92) = 8.45, p = 0.005$]. This finding is congruent with that of a previous study (Yi & Luong, 2005). In Yi and Luong study, there was a 41.9 % difference from baseline to 5-month follow-up for correct answers that the woman should perform monthly BSE. However, it appeared that this was the only question used to measure the BSE knowledge. This finding indicated that the educational intervention had successfully increased the BSE knowledge level in this population.

Confidence Level When Performing Breast Self-Examination

The confidence level when performing BSE was found to be statistically significant after the 3-month post intervention when compared the 2 groups and within the experimental group. In 2005, Ho et al reported a 20% confidence rate in the 209 participants in performance of BSE. Since other studies on this ethnic group had not reported the confidence level when performing BSE in an intervention study, a comparison to reported results of other studies couldn't be made. However, the study results indicated there was an increased level of BSE practice at 3-months post intervention. This finding is congruent with the Health Belief Model theory. The more confident one is in performance of a certain health motivation behavior, the more frequently she will do it.

Increase in Breast Self Examination at 3 Months after the Educational Intervention

Statistically significant mean changes were found with respect to BSE practice at 3-months post intervention between the control and experimental groups also within the experimental group. The experiment group had 92% responses to the yes question

indicating that they had performed BSE after the intervention versus the 77% from the control group. This finding is congruent with findings from previous research (Yi & Luong, 2005). In this study, they reported a 50.8 % increase in BSE practice in the experimental group. This finding also reinforces the congruency of the HBM as stated above.

Self-report of Mammogram Activities 3 Months after the Educational Intervention

The analysis of mammogram practice in women 40 years and older showed that there were no significant differences between the control and experimental groups in both pre and post intervention. Forty five percent ($n=18$) of the participants in the control group and 30% ($n=16$) of the participants in the experimental group were behind with their yearly mammogram activity. However, there were 22 (88%) of the 32 participants in the control group and 30 (86%) of the 35 participants in the experimental group who had reported that they had made appointments for mammograms. The results of these findings were in contrast with Bird and colleagues' study in 1998 (Bird et al, 1998). In this study, there was a significant increase in mammogram receipts from 59% to 79% after the educational intervention. However, that data was collected over the 4 years duration.

The indifferent mean change of the mammogram activity 3-month post intervention is most likely due to lacking the short time interval to allow the participants to act on the gained knowledge and its recommendations. Three months follow up is too short to show any differences between the experiment and control groups, even if the

education intervention is really efficacious. The participants in this study had reported that they were planning to have their recommended mammogram done at the time of this report. Thus given more time, the response rate may have been better.

Self Report of Clinical Breast Examination 3 Months after the Educational Intervention

There were 44% of participants in the control and 47% in the experimental groups who reported they had ever had CBE done prior to this study. These results are congruent with other study reports in respect to CBE participation (Jenkins et al, 1990; Ho et al, 2005). There were 73% participants in the control and 67% participants in the experimental groups who reported that they are current with their CBE recommendations. The results indicated there was no statistical significant change in the mean of CBE at 3 months post intervention. This result is congruent with previous research (Nguyen et al, 2001). Nguyen and colleagues reported that for their experimental group, there was no increase in CBE after the educational intervention. However, the control group, just the opposite, had reported an increase in CBE. For this study, the means of CBE from both groups are very much the same. The control group had an $M = 1.75$, $SD = .44$ while the experimental had an $M = 1.8$, $SD = .40$. In contrast to these 2 study results, Bird et al (1998) reported an increase in CBE after an educational intervention. The CBE rate had increased from 50% to 85% post intervention. However, the data was collected over the 4-year period. It is clear, that for this study, the 3-month follow up was too short to show any differences between the experimental and control groups.

Conclusions and Implications

Findings from this study support the following conclusions:

1. This educational intervention was effective in raising the awareness of breast cancer and its seriousness in both control and experimental groups.
2. Perceived seriousness of breast cancer changed after the educational intervention in the control group.
3. Perceived of susceptibility had changed after 3 months in the experimental group. The women in the experimental group perceived themselves more susceptible to breast cancer at 3-month post intervention.
4. Perceived barriers to BSE had emerged when compared the means within the groups.
5. Perceived benefit of BSE increased after the educational intervention in the intervention group when compared with the control group.
6. Levels of breast cancer knowledge, BSE knowledge, and confidence in performing BSE had increased after the educational intervention.
7. BSE practice increased after the educational intervention.
8. Most of the HBM components applied to the Vietnamese population in this study.
9. Longer time for follow-up for clinical breast examination and mammogram activities is needed to assess the effectiveness of the intervention.

Several implications can be derived from this study. Since breast cancer is the most common cancer in Vietnamese women, they are at high risk for developing breast cancer. More educational effort is needed to emphasize this important aspect so early detection and screening methods can be utilized. Continued education effort is still needed to provide education and assessment of breast cancer knowledge and proficiency of practice of BSE to assure that the women are examining their breasts in correct ways.

Cultural sensitive classes can be effective in teaching the women in this population. This educational intervention can serve as a model for other teaching programs. A similar educational program can be implemented through out the Houston area to reach out to other Vietnamese American women who did not have mean to come to participate in this project. Other nurses can also be trained, so in turn, they can help to teach the Vietnamese American women living close by in their areas such as churches, temples, or community centers. This research is one of the first experimental studies with an intervention using the HBM in the Vietnamese American woman.

Recommendations for Further Study

1. Replicate this study with a broader sampling method so a larger and well-represented population can participate.
2. Re-evaluate the HBM application in this population with a broader and larger sample.
3. Allow longer duration time for the 2nd data collection to reach more participants so higher response rate can be achieved.

4. Allow at least 9 months to 1-year time for follow- up so participants can have adequate time to respond to CBE and mammogram recommendations.
5. Use broader media such as television or newspaper to recruit participants instead of just radio and flyers in order to reach more potential participants.
6. Emphasize the important aspects in the questionnaire; eliminate unnecessary questions so the participant will not be overwhelmed or become fatigued.
7. Utilize a more effective incentive to decrease the attrition rate.
8. Study the effects of religion on the health behavior in this population.
9. Study the influence and the practice of the alternative health care practitioners on this population.

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APPENDIX A

Health Belief Model Scale in English

HEALTH BELIEF MODEL SCALE: 1981

VICTORIA CHAMPION
INDIANA SCHOOL OF NURSING
(MODIFIED, 1984; 1988)

I am interested in how you feel about each of the following statements. Circle one number, which best represents your degree of agreement with the statement. There is no right or wrong answer.

- | | |
|---|-------------------|
| 5 | STRONGLY AGREE |
| 4 | AGREE |
| 3 | NEUTRAL |
| 2 | DISAGREE |
| 1 | STRONGLY DISAGREE |

STATEMENTS

- | | |
|--|-----------|
| a. The thought of breast cancer scares me | 5 4 3 2 1 |
| b. My chances of getting breast cancer are great | 5 4 3 2 1 |
| c. My physical health makes it more likely that I will get breast cancer | 5 4 3 2 1 |
| d. When I think about breast cancer, I feel nauseous | 5 4 3 2 1 |
| e. It is embarrassing for me to do monthly breast exams | 5 4 3 2 1 |
| f. In order to do monthly breast exams, I have to give up quite a bit | 5 4 3 2 1 |
| g. I eat a well-balanced diet | 5 4 3 2 1 |
| h. Doing self breast exams prevents future problems for me | 5 4 3 2 1 |
| i. If I had breast cancer my career would be endangered | 5 4 3 2 1 |
| j. I have a lot to gain by doing self breast exam | 5 4 3 2 1 |
| k. When I think about breast cancer, my heart beat faster | 5 4 3 2 1 |
| l. Self breast exams can help me find lumps in my breast | 5 4 3 2 1 |
| m. Breast cancer would endanger my marriage (or a significant relationship) | 5 4 3 2 1 |
| n. I always follow medical orders because I believe they will benefit my state of health | 5 4 3 2 1 |
| o. Self breast exams can be painful | 5 4 3 2 1 |
| p. Breast cancer is a hopeless disease | 5 4 3 2 1 |

q. I feel that my chances of getting breast cancer in the future are good	5 4 3 2 1
r. My feelings about myself would change if I got breast cancer	5 4 3 2 1
s. I am afraid to even think about breast cancer	5 4 3 2 1
t. If I do monthly breast exams I may find a lump before it is discovered by regular health exams	5 4 3 2 1
u. I would not be so anxious about breast if I did monthly exams	5 4 3 2 1
v. There is a good possibility that I will get breast cancer	5 4 3 2 1
w. I worry a lot about getting breast cancer	5 4 3 2 1
x. Self breast exams are time consuming	5 4 3 2 1
y. My financial security would be endangered if I got breast cancer	5 4 3 2 1
z. I frequently do things to improve my health	5 4 3 2 1
aa. I take vitamins when I don't eat good meals	5 4 3 2 1
bb. My family would make fun of me if I did self breast exams	5 4 3 2 1
cc. I search for new information related to my health	5 4 3 2 1
dd. The practice of self breast exams interferes with my activities	5 4 3 2 1
ee. I have recommended yearly physical examination in addition to visits related to illness	5 4 3 2 1
ff. Doing self breast exams would require starting a new habit which is difficult	5 4 3 2 1

I would also like some information about you. Please circle the most appropriate answer or fill in the blank. If you do not understand or if you do not wish to answer, leave that question blank.

1. Have you ever been treated for breast disease or lump in the breast?

- A. Yes
- B. No

2. What type of breast disease did you have?

3. what type of treatment did you have?

4. Was the treatment effective?

- A. Yes
- B. No

5. Have any of your relatives ever had breast cancer?

A. Yes

B. No

(if yes, circle all those that apply)

A. Mother

B. Sister

C. Daughter

D. Maternal Grandmother

E. Paternal Grandmother

F. Maternal or Paternal Aunt

6. Have you ever heard of the breast self-exam?

A. Yes

B. No

7. Do you know how to do a breast self-exam?

A. Yes

B. No

8. If yes, how often do you examine your breast?

A. Every 5 - 6 months

B. Every 3 -4 months

C. Every other month

D. Every month

E. Never

9. When is the best time during the menstrual cycle to examine the breast?

A. One week before your period

B. During your period

C. One week after your period

D. Two weeks after your period

10. A woman should check her breast while in the shower.

This statement is:

A. False, she might miss lumps.

B. False, the heat of the water could cause the breast to swell

C. True, more lumps are visible when the breast is wet

D. True, the hand glides over the skin more easily when wet

11. Are a woman's right and left breasts the same size?
- A. No, during adolescence there is usually a difference.
 - B. Yes, if the woman is fully developed the breasts are the same size.
 - C. No, variation in size is normal.
 - D. No, many women take hormones which could cause unequal size.
12. How confident do you feel about your ability to do breast self examination?
- A. Not very confident
 - B. Somewhat confident
 - C. Very confident
13. Under which of the following circumstances should a woman see her doctor at once?
- A. If there is a firm ridge in the lower curve of the breast.
 - B. If the breasts are not exactly the same size.
 - C. If she accidentally hits her breasts.
 - D. A discharge from the nipple is noticed (does not include milk)
14. Which of the following is a true statement?
- A. A breast should be examined while laying on the side.
 - B. Breasts should be examined twice a month.
 - C. Breasts should be examine in a clockwise manner circling at least three times.
 - D. A woman should not examine her breasts in the shower.
15. What are the chance s that a woman will have breast cancer within her lifetime?
- A. Less than 10 in 100
 - B. About 15 in 100
 - C. About 20 in 100
 - D. About 25 in 100
16. Which of the following i s true regarding age and

cancer?

- A. Risk is greatest under age 35.
- B. Risk increases with age after 35.
- C. Age is not related to risk.

17. In which of the following groups would women be at greatest risk for developing breast cancer?

- A. Women who have a family history of breast cancer.
- B. Women who smoke cigarettes.
- C. Women who have several sexual partners.
- D. Women who breast feed.

18. Which of the following statements is true?

- A. The majority of all lumps in the breast are cancerous
- B. About half of all breast lumps are not cancerous.
- C. The majority of breast lumps are not cancerous.

19. What are the chances of a woman discovering breast cancer herself?

- A. Less than 1/2 of all lumps are discovered by women.
- B. Between 1/2 and 3/4 of all lumps are discovered by women themselves.
- C. Over 3/4 of all breast lumps are discovered by women themselves.

20. If breast cancer is discovered in a small area, the five years survival rate is :

- A. Very good.
- B. Good.
- C. Moderate.
- D. Poor.
- E. Very poor.

21. According to the American Cancer Society's recommendations for asymptomatic women, which of the following are true ?

- A. Baseline mammogram for women ages 35 to 39.
- B. Women ages 40 to 49 should have a mammogram every 1-2 years.
- C. A mammogram every year for women 50 years and older.

APPENDIX B

Health Beliefs Model Scales in Vietnamese

Health Belief Model Scale: 1981
Victoria Champion
Indiana School of Nursing
(Modified, 1984; 1988)

Xin Quý vị cho biết cảm tưởng về các câu hỏi sau đây .
Xin Quý vị chỉ khoanh tròn một con số mà thích ứng nhất với ý nghĩ của Quý vị . Không có câu trả lời nào là đúng hay sai cả .

- 1 Rất là bất đồng ý _____
2 Bất đồng ý _____
3 Không có ý kiến _____
4 Đồng ý _____
5 Rất là đồng ý _____

- | | |
|--|-----------|
| a. Ý tưởng về Ung Thư Vú làm cho tôi sợ hãi ... | 5 4 3 2 1 |
| b. Cơ hội để tôi bị Ung Thư Vú thì rất nhiều ... | 5 4 3 2 1 |
| c. Tình trạng sức khoẻ của tôi có thể làm cho tôi bị Ung Thư Vú ... | 5 4 3 2 1 |
| d. Khi tôi nghĩ về về bệnh Ung Thư Vú, tôi muốn buồn nôn ... | 5 4 3 2 1 |
| e. Tôi cảm thấy ngượng ngùng khi Tự Khám Vú của chính mình ... | 5 4 3 2 1 |
| f. Tôi phải mất mát nhiều lắm khi Tự Khám Vú của chính mình ... | 5 4 3 2 1 |
| g. Tôi ăn uống điều độ, đầy đủ ... | 5 4 3 2 1 |
| h. Tự Khám Vú của chính mình để tìm bướu có thể ngăn ngừa những tai hại trong tương lai ... | 5 4 3 2 1 |
| i. Tương lai nghề nghiệp của tôi sẽ bị ảnh hưởng nhiều một khi tôi bị Ung Thư Vú ... | 5 4 3 2 1 |
| j. Có nhiều điều lợi cho tôi khi tôi tự khám lấy vú của chính mình ... | 5 4 3 2 1 |
| k. Khi nghĩ đến bệnh Ung Thư Vú, tim tôi đập nhanh hơn lên ... | 5 4 3 2 1 |
| l. Tự Khám Vú sẽ giúp tôi tìm thấy bướu trong vú của chính mình ... | 5 4 3 2 1 |
| m. Ung Thư Vú có thể ảnh hưởng đến đời sống vợ chồng ... | 5 4 3 2 1 |
| n. Tôi luôn luôn nghe lời y học chỉ dạy vì tôi tin rằng nó sẽ có lợi cho sức khoẻ của tôi ... | 5 4 3 2 1 |
| o. Tự khám vú có thể làm cho tôi đau đớn ... | 5 4 3 2 1 |
| p. Bệnh Ung Thư Vú là một bệnh không có hy vọng ... | 5 4 3 2 1 |
| q. Tôi cảm thấy trong tương lai tôi có nhiều cơ hội bị Ung Thư Vú ... | 5 4 3 2 1 |
| r. Cảm nghĩ của tôi sẽ thật khác với bây giờ nếu tôi bị Ung Thư Vú . | 5 4 3 2 1 |
| s. Chỉ nghĩ đến Ung Thư Vú tôi đã sợ rồi ... | 5 4 3 2 1 |
| t. Nếu tôi tự khám lấy vú của chính mình mỗi tháng, tôi có thể tìm thấy bướu trước khi Bác sĩ tìm ra ... | 5 4 3 2 1 |
| u. Tôi sẽ không lo lắng nhiều về Ung Thư Vú nếu đã Tự Khám Vú của chính mình mỗi tháng ... | 5 4 3 2 1 |
| v. Có nhiều cơ hội để tôi bị Ung Thu Vú ... | 5 4 3 2 1 |

w. Tôi lo sợ nhiều về việc mình có thể bị Ung Thư Vú ...	5 4 3 2 1
x. Tự Khám Vú cho chính mình tốn nhiều thì giờ quá ...	5 4 3 2 1
y. Tài chánh của tôi sẽ bị thiếu hụt khi tôi bị Ung Thư Vú ...	5 4 3 2 1
z. Tôi thường xuyên làm nhiều việc để cải tiến sức khoẻ của chính mình	5 4 3 2 1
aa. Tôi có uống thuốc bổ mỗi khi không ăn uống đầy đủ ...	5 4 3 2 1
bb. Gia đình của tôi sẽ chế nhạo tôi nếu họ biết là tôi thực hành phương pháp tự khám lấy vú của chính mình ...	5 4 3 2 1
cc. Tôi tìm tòi nghiên cứu các tin tức mới mà có liên hệ với sức khoẻ của mình ..	5 4 3 2 1
dd. Tự Khám Vú của chính mình cản trở tới những hoạt động khác của tôi	5 4 3 2 1
ee. Bác sĩ có khuyên tôi nên đi khám tổng quát hàng năm, không kể đến những lần đi khám bệnh khi đau ốm ...	5 4 3 2 1
ff. Tự Khám Vú cho chính mình đòi hỏi tôi phải bắt đầu một thói quen mới. Điều này thật là khó khăn ...	5 4 3 2 1

Tôi muốn được biết thêm vài chi tiết về Quý vị . Xin hãy khoanh tròn hay điền vào chỗ trống . Nếu Quý vị không muốn trả lời, xin hãy bỏ trống ...

1. Bạn bao nhiêu tuổi _____

2. Tình trạng gia cảnh:

- A. Có chồng
- B. Ly dị
- C. Goá chồng
- D. Độc thân

3. Trình độ học vấn:

- A. Dưới 12 năm
- B. 13
- C. 14
- D. 15
- E. 16
- F. Trên 16 năm

4. Bạn đã có bao giờ được chữa trị về bệnh có bướu ở vú hay bệnh về vú bao giờ chưa ?

- A. Có
- B. Chưa

5. Bạn bị đau vú về bệnh gì ?

6. Chữa trị bằng cách gì ?

7. Cách chữa trị này có hiệu nghiệm hay không ?

A. Có

B. Không

8. Bạn có người nào trong gia đình bị Ung Thư Vú hay không ?

A. Có

B. Không

8a. (Nếu có, xin vui lòng khoanh tròn những chữ nào đúng ở dưới đây)

A. Mẹ

B. Chị hay Em

C. Con Gái

D. Bà Ngoại

E. Bà Nội

F. Cô hay Dì

9. Bạn có bao giờ nghe biết về việc tự khám lấy vú của chính mình hay không ?

A. Có

B. Không

10. Bạn có biết cách Tự Khám Vú của chính mình hay không ?

A. Có

B. Không

11. Nếu có, thông thường trong bao lâu thì bạn tự khám vú cho chính mình:

A. Mỗi 5 hay 6 tháng

B. Mỗi 3 hay 4 tháng

C. Cách một tháng làm một lần

D. Mỗi tháng

E. Không bao giờ

12. Khi nào là tốt nhất để khám lấy vú của chính mình ?

A. Một tuần trước khi có kinh

B. Trong khi có kinh

C. Một tuần sau khi có kinh

D. Hai tuần sau khi có kinh

13. Phụ nữ nên khám vú khi tắm dưới vòi nước hoa sen . Câu này:

- A. Sai . Bạn có thể sốt bươu
- B. Sai . Nước nóng làm vú sưng lên
- C. Đúng . Bướu sẽ dễ thấy hơn khi khi vú bị ướt
- D. Đúng . Bàn tay dễ khám hơn khi da bị ướt

14. Vú bên phải và vú bên trái của phụ nữ có cùng một kích thước ?

- A. Không, khi ở tuổi dậy thì thông thường lại khác
- B. Đúng, khi người phụ nữ trưởng thành thì vú sẽ giống nhau
- C. Không, nếu cả hai bên vú không giống nhau thì cũng là bình thường
- D. Không, nhiều phụ nữ uống thuốc kích thích tố nên có thể làm vú không có cùng kích thước

15. Bạn có tự tin nhiều vào khả năng của mình khi khám vú của chính mình ?

- A. Không tự tin cho lắm
- B. Có tự tin đôi chút
- C. Rất tự tin

16. Khi nào thì Quý vị Phụ nữ nên đi gặp Bác sĩ liền ngay lập tức ?

- A. Nếu phía dưới vòng vú bị cứng
- B. Nếu vú không có cùng kích thước
- C. Nếu lỗ bị đọng vào vú
- D. Nếu có chất nước nhờn chảy ra (không kể sữa cho con bú)

17. Trong những câu sau đây, xin chọn một câu đúng:

- A. Vú chỉ nên khám khi nằm một bên
- B. Nên khám vú một tháng hai lần
- C. Vú chỉ nên khám theo chiều kim đồng hồ, ít nhất là 3 lần
- D. Phụ nữ không nên khám vú dưới vòi nước hoa sen

18. Tỷ số để một phụ nữ bị Ung Thư trong đời của người ấy là:

- A. Ít hơn 10 phần trăm
- B. Khoảng 15 phần trăm
- C. Khoảng 20 phần trăm
- D. Khoảng 25 phần trăm

19. Câu nào dưới đây là đúng giữa tuổi tác và bệnh Ung Thư

- A. Sự nguy hiểm sẽ nhiều nhất khi dưới 35 tuổi
- B. Nguy hiểm sẽ tăng dần với sau 35 tuổi
- C. Tuổi tác không liên hệ tới bệnh Ung Thư

20. Với 4 nhóm sau đây, nhóm nào mà phụ nữ sẽ bị nhiều nguy hiểm nhất về việc bị Ung Thư Vú

- A. Phụ nữ mà trong quá trình (lịch sử) gia đình đã có người bị Ung Thư Vú
- B. Phụ nữ có hút thuốc lá
- C. Phụ nữ có nhiều bạn luyện ái
- D. Phụ nữ cho con bú

21. Với những câu sau đây, xin chọn 1 câu đúng với ý của bạn

- A. Phần lớn những bướu ở vú là Ung Thư
- B. Khoảng 50 phần trăm bướu ở vú không phải là Ung Thư
- C. Đa số bướu ở vú không phải là Ung Thư

22. Cơ hội mà người phụ nữ khám phá ra mình bị Ung Thư Vú là:

- A. Dưới 1/2 của số bướu đã được tìm ra bởi người phụ nữ
- B. Kháng giữa 1/2 và 3/4 của số bướu đã được tìm ra bởi người phụ nữ
- C. Trên 3/4 của số bướu ở vú đã được tìm ra bởi người phụ nữ

23. Nếu Ung Thư Vú được tìm ra trong một vùng nhỏ, tỷ số sống sót trong vòng 5 năm là:

- A. Rất tốt
- B. Tốt
- C. Vừa chùng
- D. Không tốt
- E. Rất tệ

24. Theo lời khuyên của Hiệp hội Ung Thư Hoa Kỳ, với những phụ nữ không có triệu chứng của bệnh Ung Thư, xin chọn các câu nào sau đây là đúng:

(Xin vui lòng khoanh tròn vào tất cả các câu mà bạn đã cho là đúng với ý bạn)

- A. Chụp hình vú để có hình làm căn cứ về sau này cho các phụ nữ 35 tới 39 tuổi
- B. Phụ nữ 40 tới 49 nên chụp hình vú cho cứ 1 hay 2 năm một lần
- C. Phụ nữ 50 tuổi hay hơn nữa nên chụp hình vú mỗi năm một lần

APPENDIX C

Demographic Questionnaires in English and Vietnamese

Demographic Questionnaires

1. How old are you? _____ years

2. What is your marital status?

- A. Married
- B. Divorced
- C. Widowed
- D. Single

3. Your occupation _____

If retired, what was your occupation prior to retirement?

4. What is your yearly income?

- a. less than \$ 20,000
- b. \$20,001-\$40,000
- c. \$41,001-\$50,000
- d. \$50,001-\$75,000
- e. More than \$75,000

4a. What is your religion?

- a. Catholic
- b. Buddhist
- c. Protestant
- d. Ancestor Worshipping
- e. Other (s) _____ (Please specify which one)

4b. Which language do use at home?

- a. Vietnamese
- b. English
- c. Other (s) _____ (Please specify which one)

5. How long you have been in the United States?

- a. Less than 5 years
- b. 5-10 years
- c. 10-15 years
- d. 15-20 years
- e. 20-25 years
- f. More than 25 years

6. Highest Level of Education Completed: (PLEASE CIRCLE ONE)
- a. None b. 1st to 8th grade c. 9th to 11th grade
- d. High school graduate e. Technical/Vocational f. Some College
- g. College Degree h. Advanced Degree

7. What will you say is your principle source of health information?
(PLEASE CIRCLE ONE)

- a. Family and friends b. Your doctor c. Pamphlets
- d. Newspapers/magazines e. Television f. Radio
- g. Mail h. Other _____ (PLEASE SPECIFY)

8. Do you check your breast regularly using Breast Self Examination technique?

(PLEASE CIRCLE ONE)

- a. Yes b. If yes, please tell us how often _____
- c. No d. If No, please tell us why not? _____

9. Have you ever had your breast checked by a doctor or nurse?
(PLEASE CIRCLE ONE)

- a. Yes b. No =====GO TO QUESTION 11

10a. If yes, please tell us how often _____

10b. Please tell us approximately when were your last checked?

Month _____ Year _____

10. Have you ever had a mammogram (X-Ray of your breast)?

- a. Yes b. No =====GO TO QUESTION 12

11.a If yes, how many mammograms have you had in your lifetime? _____

11b. When was your last mammogram? -----/-----
Month Year

11. Why did you get a mammogram? (PLEASE CIRCLE ALL THAT ARE TRUE)

- a. Family member had breast cancer
 - b. Friend had breast cancer
 - c. Family member suggested it
 - d. Friend suggested it
 - e. My doctor suggested it
 - f. Routine screening/parts of a medical check up
 - g. I heard it was important to have this done on TV, Radio, Newspaper.
 - h. My age
 - i. Peace of mind
 - j. Some other reason (PLEASE SPECIFY WHAT REASON)
-

12. If no, why have you not gotten a mammogram?

(PLEASE CIRCLE ALL THAT ARE TRUE)

- a. I put it off
- b. I did not know I should
- c. I did not know where to go

- d. Not needed/ not necessary
 - e. It costs too much
 - f. I did not have a way to get there
 - g. I did not know what kind of doctor to see
 - h. No insurance coverage
 - i. I do not go to doctors
 - j. I do not have a doctor
 - k. Doctor did not say to get one
 - l. It is to embarrassing
 - m. I have not had any problem
 - n. I am afraid of cancer
 - o. I am afraid that it is painful
 - p. I am afraid of radiation
 - q. Some other reason (PLEASE SPECIFY WHAT REASON)
-

13. What was the reason for your last mammogram? (PLEASE CIRCLE ONE)

- a. Routine screening/ part of medical checkup
- b. Diagnostic

14b1. If it was diagnostic, have you ever had a screening mammogram done? (PLEASE CIRCLE ONE)

- a. Yes
- b. No

14. What are the chances that a mammogram can find breast cancer in the early stages? (PLEASE CIRCLE ONE)

- a. Very low b. Somewhat low c. Moderate
d. Somewhat high e. Very high

15. If you were to get breast cancer, what are the chances that it could be cured if caught early? (PLEASE CIRCLE ONE)

- a. Very low b. Some what low c. Moderate

Các Câu Hỏi Trắc lượng về Nhân Khẩu Học

(Xin Quý vị vui lòng viết ra hay khoanh tròn vào vào các câu cho là ưng ý nhất)

1. Bạn bao nhiêu tuổi ? _____
2. Tình trạng gia cảnh ra sao ?
 - A. Đã lập gia đình (có chồng)
 - B. Ly dị
 - C. Góa phụ
 - D. Độc thân (chưa bao giờ lập gia đình)
3. Nghề nghiệp của Bạn là _____
(Nếu đã nghỉ hưu, xin ghi xuống nghề nghiệp của Bạn trước khi về hưu)
4. Lợi tức hàng năm (đồng niên) của Bạn là bao nhiêu ?
 - a. Dưới 20000 Mỹ Kim
 - b. 20001 - 40000 Mỹ Kim
 - c. 40001 - 50000 Mỹ Kim
 - d. 50001 - 75000 Mỹ Kim
 - e. Nhiều hơn 75000 Mỹ Kim
- 4a. Tôn giáo của bạn là gì?
 - a. Công Giáo
 - b. Phật Giáo
 - c. Tin Lành và các Cơ Đốc Giáo
 - d. Thờ Ông Bà Tổ Tiên
 - e. Một tôn giáo khác: _____ (Xin vui lòng viết ra)
- 4b. Bạn dùng ngôn ngữ nào ở tại nhà?
 - a. Tiếng Việt
 - b. Tiếng Anh
 - c. Một ngôn ngữ khác: _____ (Xin vui lòng viết ra)
5. Bạn đã sống tại Hoa Kỳ trong bao lâu ?
 - a. Dưới 5 năm
 - b. 5 - 10 năm
 - c. 10 - 15 năm
 - d. 15 - 20 năm
 - e. 20 - 25 năm
 - f. Lâu hơn 25 năm

6. Trình độ học vấn đã hoàn tất ở mức cao nhất là : (Xin vui lòng chọn khoanh tròn một vòng)

- a. Không đi học
- b. Lớp 1 đến lớp 8
- c. Lớp 9 đến lớp 12
- d. Tốt nghiệp Trung học (Tú tài)
- e. Trường Kỹ thuật hay Huấn nghệ
- f. Có vài Chứng chỉ Đại học
- g. Có Văn bằng Đại học
- h. Có Văn bằng Cao học

7. Bạn lấy nguồn tin tức Y tế chính thức của Bạn ở đâu? (Xin vui lòng chọn khoanh tròn một vòng)

- a. Thân nhân và bè bạn
- b. Bác sĩ của Bạn
- c. Truyền đơn quảng cáo
- d. Nhật báo / Tạp chí
- e. Truyền hình
- f. Truyền thanh
- g. Thư tín
- h. Một cách khác _____ (Xin nêu ra)

8. Bạn có xem xét đôi vú thường xuyên với Kỹ thuật Tự khám lấy vú không ?

- a. Có
- b. Nếu có, xin vui lòng cho biết bao lâu thì bạn làm một lần ? _____
- c. Không
- d. Nếu không, xin vui lòng giải thích tại sao lại không ? _____

9. Có bao giờ bạn được khám vú bởi Bác sĩ hay Y-tá không ? (Xin vui lòng chọn khoanh vào 1 vòng)

- a. Có
- b. Không (Xin trả lời tiếp câu 12)

9a1. Nếu có, xin vui lòng cho biết bao lâu thì bạn làm một lần ? _____

9b2. Xin cho biết khoảng chừng lần cuối là làm khi nào ? Tháng _____ năm _____

10. Bạn có bao giờ được chụp hình quang tuyến cho vú chưa (Mammogram)?

- a. Có
- b. Không -> Xin đến trả lời câu hỏi 12

10a1. Nếu có, xin cho biết Bạn đã làm được bao nhiêu lần trong suốt cuộc đời Bạn rồi ?
_____ lần

10b2. Xin cho biết lần cuối là khi nào ? Tháng _____ năm _____

11. Tại sao Bạn đã được chụp hình quang tuyến cho vú của mình ? (Xin vui lòng chọn tất cả các câu trả lời thích hợp với trường hợp của Bạn)

- a. Có thân nhân trong gia đình bị Ung thư vú
- b. Có người bạn bị Ung thư vú
- c. Có thân nhân đề nghị nên làm
- d. Có người bạn đề nghị làm
- e. Bác sĩ của tôi đề nghị làm
- f. Là một việc làm thường xuyên / một phần của việc khám bệnh thường niên
- g. Theo truyền hình, truyền thanh và báo chí cho là rất quan trọng
- h. Theo tuổi tác của tôi
- i. Cho được yên tâm
- j. Vì một lý do nào khác (xin kể ra đây) _____

12. Nếu trả lời không, xin cho biết là Tại sao không chụp hình quang tuyến cho vú ? (Xin vui lòng chọn tất cả các câu trả lời thích hợp với trường hợp của Bạn)

- a. Tôi đã cứ chần chừ
- b. Tôi đã không biết là tôi nên làm
- c. Tôi đã không biết là phải đi đến đâu để làm
- d. Thấy không cần / không cần thiết
- e. Tốn quá nhiều tiền
- f. Tôi không có cách nào đi đến đó để làm
- g. Tôi đã không biết đi gặp bác sĩ loại nào
- h. Không có bảo hiểm
- i. Tôi không đi gặp bác sĩ
- j. Tôi không có một bác sĩ
- k. Bác sĩ đã không nói làm một lần
- l. Thật là mắc cỡ quá đi thôi
- m. Tôi đã không có trực trặc gì cả
- n. Tôi sợ Ung thư
- o. Tôi sợ rằng việc ấy đau lắm
- p. Tôi sợ phóng xạ
- q. Những lý do khác _____

13. Lý do nào cho cuộc chụp hình vú cuối cùng ? (Xin vui lòng chọn khoanh tròn một vòng)

- a. Là một việc làm thường xuyên / một phần của việc khám bệnh thường niên
- b. Là để định bệnh

13b1. Nếu là để cho việc định bệnh, Bạn đã bao giờ có chụp hình vú cho việc sàng lọc bệnh tình hay không ? (Xin vui lòng chọn khoanh tròn một vòng)

- a. Có
- b. Không

14. Có cơ hội nào mà hình quang tuyến vú có thể tìm ra Ung thư vú ở lúc mới sớm phát ra không ?

- a. Rất thấp
- b. Vừa thấp
- c. Có thể được
- d. Hơi cao
- e. Rất cao

15. Nếu Bạn đã bị Ung thư thì có cơ hội nào sẽ chữa lành nếu tìm ra sớm không ?

- a. Rất thấp
- b. Vừa thấp
- c. Có thể được
- d. Hơi cao
- e. Rất cao

APPENDIX D

Three-month Follow-up Questionnaire in English and Vietnamese

Effect of an Educational Intervention on Breast Cancer Screening and Early Detection
Beliefs and Practices in Vietnamese American Women

Three- month Follow-up Questionnaire

1. Since your last educational session, are you practicing BSE monthly?
A. Yes B. No
2. Are you more confident in examining your own breast?
A. Yes B. No
3. Did you have any clinical breast exam since the educational session?
A. Yes B. No
4. Did you have any mammogram since the educational session?
A. Yes B. No
5. If you had a mammogram done since last meeting, what was the mammogram result?
 - a. Normal
A. Yes B. No
 - b. Abnormal
A. Yes B. No
 - i. If abnormal, was it cancer?
A. Yes B. No
 - ii. Are you under the care of a oncologist?
A. Yes B. No
6. If you are over 40 years old and have not had a mammogram, did you make an appointment for your screening mammogram?
A. Yes B. No
7. Have you talked to any of your female friends or relatives about BSE?
A. Yes B. No
8. Did your personal habit changes as a result of the education session?
A. Yes B. No

9. Have you read any more information in regard to breast cancer
A. Yes B. No

Thank you for taking your time to answer this questionnaire.

Ung Thư Vú trong Phụ nữ Mỹ Gốc Việt- Ba tháng tiếp theo

(Xin Quý vị vui lòng khoanh tròn vào một vòng vào các câu cho là ứng ý nhất)

1- Từ lần cuối của việc Học Can Thiệp, Bạn có thực hành việc Tự Khám Vú hay không?

a. Có b. Không

2- Bạn có tự tin hơn trong việc tự khám vú của chính Bạn hay không?

a. Có b. Không

3- Bạn đã có được khám vú bởi bác sĩ hay y sĩ kể từ lần đi Học Can Thiệp cuối cùng hay không?

a. Có b. Không

4. Bạn đã có được chụp hình quang tuyến vú kể từ lần đi Học Can Thiệp cuối cùng hay không?

a. Có b. Không

5. Nếu bạn đã chụp hình quang tuyến vú kể từ lần đi Học Can Thiệp cuối cùng, kết quả như thế nào:

a. Bình thường

a. Có b. Không

b. Không Bình thường

a. Có b. Không

i. Nếu không bình thường, có phải là ung thư hay không? a. Có b. Không

ii. Có Bác sĩ về ung thư theo dõi bạn thường xuyên hay không? a. Có b. Không

6- Nếu Bạn đã quá 40 tuổi và chưa từng có chụp hình quang tuyến vú, Bạn đã có lấy hẹn để được chụp hình quang tuyến vú loại sàng lọc hay chưa?

a. Có b. Không

7- Bạn đã có nói chuyện với bất kỳ các bạn gái hay người thân về việc Tự Khám Vú hay không?

a. Có b. Không

8- Các thói quen của cá nhân Bạn có thay đổi vì kết quả của lớp học vừa hay không?

a. Có b. Không

9- Bạn có đọc thêm các tin tức về Ung Thư Vú hay không?

a. Có b. Không

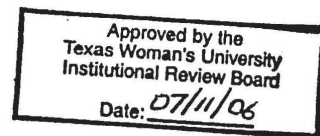
APPENDIX E

Informed and Consent Forms in English and Vietnamese



College of Nursing
Houston Center
1130 John Freeman Blvd.
Houston, TX 77030-2897
713-794-2100 Fax 713-794-2103

ID No:



CONSENT TO PARTICIPATE IN RESEARCH

Title: Effects of an educational intervention on breast cancer screening and early detection beliefs and practices in Vietnamese American women

Investigator: Tuong-Vi V. Ho.....281-890-0909
Advisor: Ann Malecha, Ph.D.....713-794-2725

Explanation and Purpose of the Research

You are being asked to participate in a research study for Ms. Ho's dissertation at Texas Woman's University. The purpose of this research is to determine the effects of a culturally specific breast cancer educational program on breast cancer beliefs and practices in Vietnamese American women. The specific aims of this study include testing the effect of a breast self exam educational intervention based upon Champion's Breast Self Exam Scale and to educate the Vietnamese American women on techniques for breast self exam.

Research Procedure

For this study, on the day of the study, you will be asked first to complete a pretest questionnaire regarding your breast health beliefs and practices, breast cancer knowledge, and demographic information. This will take about 30 minutes to complete. You will be randomly assigned to 1 of 2 groups: Group 1 will receive the breast health educational session 3 months from today. Group 2 will receive the breast health educational session today. The breast health educational session consists of a 40-minute session on breast cancer and breast self-exam and a demonstration on breast self-exam with a breast model. Approximate about 3 months from today, Ms. Ho will contact you by phone. If you are in Group 1, Ms. Ho will ask you to return for the educational session and to complete a questionnaire on breast health. If you are in Group 2, Ms. Ho will telephone you and ask you questions regarding breast health. Your maximum total time commitment in the study, including the educational session, is estimated to be approximately 2 hours.

Potential Risks

Potential risks related to your participation in the study include fatigue at any time of the research due to mental concentration. To avoid fatigue, you may take a break between the pretest and the educational session. You may also take a break as needed. You may experience some embarrassment during the educational session. To avoid or minimize embarrassment, the educational session will be conducted with all female participants, in closed classroom door, and with only the researcher and her assistants present. Another possible risk to you as a result of your participation in this study is release of confidential information. Confidentiality will be protected to the extent that is allowed by law. A

Initial: _____

Think SUCCESS  Think TWU

code number, rather than your real name, will be used on the written data. The written documentations are placed in a locked file cabinet. Only the investigator and her advisor will have access to the written data. The written document will be shredded within 5 years. It is anticipated that the results of this study will be published in the investigator's dissertation as well as in other research publications. However, no names or other identifying information will be included in any publication.

The researchers will try to prevent any problem that could happen because of this research. You should let the researchers know at once if there is a problem and they will help you. However, TWU does not provide medical services or financial assistance for injuries that might happen because you are taking part in this research.

Participation and benefits

Your involvement in this research study is completely voluntary, and you may discontinue your participation in the study at any time without penalty. There is no costs to volunteers for participation in this study. Volunteers may benefit from this study by gaining a breast self exam skill and a summary of the result of this study will be sent to you upon request*.

Questions Regarding the Study

If you have any questions about the research study you may ask the researchers; their phone numbers are at the top of this form. If you have questions about your rights as a participant in this research or the way this study has been conducted, you may contact the Texas Woman's University Office of Research at 713-794-2840 or via e-mail at IRB@twu.edu. You will be given a copy of this signed and dated consent form to keep.

Signature of Participant

Date

The above consent form was read, discussed, and signed in my presence. In my opinion, the person signing said consent form did so freely and with full knowledge of its contents.

Signature of Investigator

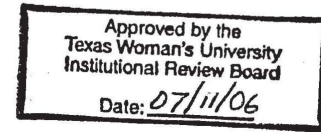
Date

* If you would like to receive a summary of the results of this study, please provide an address to which this summary should be sent:



College of Nursing
Houston Center
1130 John Freeman Blvd.
Houston, TX 77030-2897
Phone: 713/794-2100

Mã Số #



GIẤY ĐỒNG Ý THAM GIA VÀO CUỘC NGHIÊN CỨU

Đề tài: Ảnh hưởng của việc Học Can Thiệp để tìm ra sớm Ung Thư Vú trong Phụ nữ Mỹ Gốc Việt

Người Nghiên Cứu: Tường-Vi V. Hồ 281-890-0909
Người Cố Vấn: Tiến sĩ Ann Malecha 713-794-2725

Giải thích về mục đích của cuộc nghiên cứu

Quý vị đang được mời gọi tham gia vào cuộc nghiên cứu học hỏi cho Luận án Tiến sĩ của Cô Hồ tại Trường Đại Học Texas Woman. Mục đích của cuộc nghiên cứu này là để xác định các ảnh hưởng chính xác về văn hoá trên việc tìm ra sớm Ung Thư Vú qua chương trình giáo dục trên một nhóm Người Phụ nữ Mỹ Gốc Việt. Cuộc tìm hiểu này chú tâm vào ngay cả vào việc thử nghiệm các ảnh hưởng của việc Học Can Thiệp Tự Khám Vú để tìm ra sớm Ung Thư Vú dựa vào cách Đo lường việc Tự Khám Vú của Champion; giúp hướng dẫn giáo dục quý Phụ nữ Mỹ Gốc Việt kỹ năng để Tự Khám Vú và cũng để gia tăng tính tự tin khi thi hành việc Tự Khám Vú

Phương Cách Nghiên Cứu

Cho cuộc tìm hiểu này, vào ngày điều nghiên, trước hết quý vị sẽ được mời hoàn tất một số câu hỏi tiền trắc nghiệm về niềm tin và việc thực hành cho sức khoẻ của đôi vú, kiến thức về Ung Thư Vú, và các tin tức về thống kê nhân sự. Việc này sẽ mất chừng 30 phút để hoàn tất. Sau đó bạn sẽ được chọn vào một trong hai nhóm: Nhóm 1 sẽ tham dự vào cuộc học vào 3 tháng tới đây; Nhóm 2 sẽ tham dự vào cuộc học ngày hôm nay. Khóa học này dài chừng 40 phút bao gồm phần lý thuyết và thực hành trên các mô hình vú để thực tập. Trong vòng 3 tháng, Cô Hồ sẽ liên lạc với bạn bằng điện thoại. Nếu bạn là trong nhóm 1, Cô Hồ sẽ mời bạn trở lại để tham dự khóa học tập và trả lời những câu hỏi liên quan đến sức khoẻ của đôi vú. Nếu bạn thuộc nhóm 2, Cô Hồ sẽ phỏng vấn tiếp theo qua điện thoại về những vấn đề liên quan đến sức khoẻ của đôi vú. Thời gian tối đa dành cho cuộc tìm hiểu này ước chừng là hai giờ.

Các Cơ Nguy

Các cơ nguy liên đới tới sự tham gia của quý vị cho cuộc tìm hiểu này bao gồm một môi bất kỳ lúc nào trong cuộc nghiên cứu do việc chú tâm vào cuộc nghiên cứu. Để tránh đi được sự mỏi mệt này, quý vị nên tận dụng các cuộc giải lao giữa thời gian Tiền Trắc Nghiệm và khóa học.

Một cơ nguy khác cho quý vị như là kết quả của việc tham dự vào cuộc tìm hiểu này là cho các thông tin dữ kiện riêng tư. Các chi tiết riêng tư sẽ được bảo vệ theo luật lệ hiện hành. Một mã số được dùng thay vì tên thật của quý vị sẽ được dùng trên các dữ kiện

Chữ ký tắt: _____

viết ra . Các bài viết sẽ được cất kín trong một tủ có khoá . Chỉ có Người Nghiên Cứu và Vị Cố Vấn có thể lấy được các dữ kiện viết ra . Các bài viết sẽ được cất nhỏ bỏ đi trong vòng 5 năm . Điều sẽ xảy ra là kết quả của cuộc tìm hiểu này sẽ được công bố trên Luận án Tiến sĩ của Người Nghiên Cứu cũng như là các Sách vở Nghiên Cứu khác . Tuy nhiên, sẽ không có tên hay các thông tin căn cước xác định sẽ được đăng vào bất kỳ ấn phẩm nào cả .

Các nhà nghiên cứu sẽ cố gắng tránh đi các trục trặc gây nên bởi cuộc nghiên cứu này . Quý vị nên thông báo cho Người Nghiên Cứu ngay nếu có một trục trặc nào và họ sẽ giúp đỡ cho quý vị . Tuy nhiên, Trường Đại Học Texas Woman sẽ không cung cấp các dịch vụ Y tế hay trợ cấp các chi phí cho các thương tổn có thể xảy ra khi quý vị đang tham dự vào cuộc nghiên cứu này .

Tham dự và quyền lợi

Việc dự phần của quý vị trong cuộc nghiên cứu tìm hiểu này là hoàn toàn tự nguyện và quý vị có thể chấm dứt việc tham gia vào cuộc tìm hiểu này bất kỳ lúc nào với không có biện pháp chế tài nào cả . Sẽ không có tổn kém cho các tự nguyện tham dự viên cho việc tham gia vào cuộc tìm hiểu này . Tự nguyện viên có thể thu nhận được khả năng Tự Khám Vú và một bản tóm lược của cuộc tìm hiểu này sẽ gửi đến cho quý vị một khi được yêu cầu đến *.

Các câu hỏi về cuộc tìm hiểu

Nếu quý vị có bất kỳ câu hỏi nào về cuộc nghiên cứu tìm hiểu này, quý vị có thể hỏi Người Nghiên Cứu; số điện thoại của họ ở trên đầu trang của mẫu giấy này . Nếu quý vị có các câu hỏi về quyền hạn của quý vị như là một Tham Dự Viên hay cách hành xử của cuộc tìm hiểu này, quý vị có thể liên lạc về Văn phòng Nghiên cứu thuộc Trường Đại Học Texas Woman tại số điện thoại 713-794-2840 hay thư điện tử tại IRB@twu.edu . Quý vị sẽ được cho một bản sao của mẫu Đồng ý nay có chữ ký và ngày ký để giữ lấy

Chữ ký của Người Tham Dự

Ngày

Mẫu Đồng ý đã được đọc, bàn luận và ký với sự có mặt của tôi . Theo sự hiểu biết của tôi, người ký công nhận mẫu Đồng ý đã tự do làm như thế và với sự hiểu biết đầy đủ của các chi tiết trong nội dung

Chữ ký của Người Nghiên Cứu

Ngày

* Nếu quý vị thích có một bản tóm lược của cuộc tìm hiểu này, xin vui lòng cung cấp một địa chỉ mà bản tóm lược nên được gửi đến

APPENDIX F

Texas Woman's University Institutional Review Board Approval

MEMORANDUM

TO: Ann Malecha
Tuong Vi V Ho Student ID# 045512

FROM: IRB

DATE: July 11, 2006

SUBJECT: IRB Application

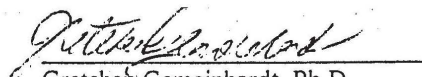
Proposal Title Effects of an educational intervention on breast cancer screening and early detection beliefs and practices in Vietnamese American women

Your application to the IRB has been reviewed and approved.

This approval lasts for 1 year. The study may not continue after the approval period without additional IRB review and approval for continuation. It is your responsibility to assure that this study is not conducted beyond the expiration date.

Any changes in the study or informed consent procedure must receive review and approval prior to implementation unless the change is necessary for the safety of subjects. In addition, you must inform the IRB of adverse events encountered during the study or of any new and significant information that may impact a research participant's safety or willingness to continue in your study.

REMEMBER TO PROVIDE COPIES OF THE SIGNED INFORMED CONSENT TO THE OFFICE OF RESEARCH, MGJ 913 WHEN THE STUDY HAS BEEN COMPLETED. INCLUDE A LETTER PROVIDING THE NAME(S) OF THE RESEARCHER(S), THE FACULTY ADVISOR, AND THE TITLE OF THE STUDY. GRADUATION MAY BE BLOCKED UNLESS CONSENTS ARE RETURNED.


Gretchen Gemeinhardt, Ph.D.
Chairperson

APPENDIX G

Agency Permissions

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE Lac Hong Day Center

GRANTS TO Taong V. Hu

a student enrolled in a program of nursing leading to a Doctoral Degree at Texas Woman's University, the privilege of its facilities in order to study the following problem:

Project on : Effects of an Educational Intervention
on Breast Cancer Screening & Early Detection

The conditions mutually agreed upon are as follows:

1. The agency (may) (may not) be identified in the final report.
2. The names of consultative or administrative personnel in the agency (may) (may not) be identified in the final report.
3. The agency (wants) (does not want) a conference with the student when the report is completed.
4. The agency is (willing) (unwilling) to allow the complete report to be circulated through interlibrary loan.
5. Other _____

Date: 6/26/06

V. Hu
Signature of Student

M. Nguyen
Signature of Agency Personnel

An V. Malachuk
Signature of Faculty Advisor

Fill out and sign three copies to be distributed as follows: Student, Agency, TWU College of Nursing

APPENDIX H

Health Belief Model Scale Instrument Permissions

From: Gettle
To: Ms. Vi Ho
Date: Monday, September 19, 2005 04:33PM
Subject: FW: Health Belief Model Scale- Study results and Permission

Dear Ms. Ho –

You have permission to use the material Dr. Champion that was sent to you earlier as long as you cite her work. She is writing a newer version of the scale but it has not been published yet and we can not share until it is published. Therefore, use the instrument that was originally sent.

Thank you –

Darlene Gettle

Senior Administrative Assistant for

Dr. Victoria Champion

Indiana University

School of Nursing

1111 Middle Drive

Indianapolis, IN 46202

Phone: 317-278-2036

Fax: 317-278-2021

From: Champion, Victoria L
Sent: Monday, September 19, 2005 4:26 PM
To: Gettle, Georgette Darlene
Subject: FW: Health Belief Model Scale- Study results and Permission

Table 10

Marital Status Distribution among the 3 Sessions and the Experimental and Control Group

Session /Group	Percentage (n)				
	Married	Divorced	Widowed	Single	
Session #1					
Control (n = 27)	66.7 (18)	11.1 (3)	7.4 (2)	14.8 (4)	
Experimental (n = 32)	46.9 (15)	6.3 (2)	25 (8)	21.9 (7)	
Session #2					$X^2 (6, N = 128) = 1.7$
Control (n = 20)	60 (12)	5 (1)	10 (2)	25 (5)	
Experimental (n = 22) ^a	62.5 (15)	4.2 (1)	12.5 (3)	12.5 (3)	$p = .94$
Session #3					
Control (n = 12)	58.3 (15)	8.3 (1)	25 (3)	8.3 (1)	
Experimental (n = 15) ^a	52.9 (9)	0	5.9 (1)	29.4 (5)	
Total Sample (N = 128)					$X^2 (3, N = 128) = 2.1$
Control (n = 59)					
Treatment (n = 69)					$p = .55$

^a 4 women in the treatment group refused to give marital status

Income Level

Only 48 of the women (65%) in the treatment group answered the income level question. Eighty one percent (n = 39) of the 48 women in this group reported having an annual income below \$ 20,000, and 15% (n = 7) reported having an income in the range of \$20,001 to \$40,000 annually. There were 49 women (83%) in the control group who responded to this question. Sixty three percent (n = 32) of the women in this group