Improving the frequency and proficiency of breast self examination

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Improving the frequency and proficiency of breast self examination

Scalzo Tarrant, Theresa, M.S.N.

University of Nevada, Las Vegas, 1992
IMPROVING THE FREQUENCY AND PROFICIENCY OF
BREAST SELF EXAMINATION

by

Theresa Scalzo Tarrant, R.N., B.S.N.

A thesis submitted in partial fulfillment
of the requirements for the degree of

Master of Science

in

Nursing

Department of Nursing
University of Nevada, Las Vegas
December, 1992
Approval Page

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December, 1992
Abstract

The value of breast self examination has been well documented. Yet, only 35 percent or less of women perform BSE with even fewer performing it proficiently. This study was aimed at improving both the frequency and proficiency of BSE. The Neuman Health Care Systems Model was the conceptual framework for this research. There was a total N of 60 women divided into three equal groups. Group I received a one to one teaching program on BSE and a pamphlet by the American Cancer Society. Group II received only the same pamphlet. Group III received no intervention. All groups were tested pre intervention and three months later for frequency and proficiency of BSE. After the three month interval, Group I performed BSE more proficiently than Groups II and III, and more frequently than Group II, but only as frequently as Group III. Group II performed BSE more proficiently but not as frequently as Group III. After the post test, those subjects in Group II received the teaching program and the subjects in Group III received both the teaching program and the pamphlet. The researcher recognizes the need for further longer term follow up to determine if the proficiency and frequency levels are maintained or if they change with time.
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Chapter One

Introduction

In the United States, breast cancer is second only to lung cancer as the cause of death of women. It has been estimated that one in every nine women will be diagnosed with breast cancer in her lifetime. The American Cancer Society estimates that there are 143,000 new cases and approximately 43,000 deaths related to breast cancer yearly (American Cancer Society, 1989). Since there currently exists no reliable method of prevention, our best defense against this killer is early detection. In fact, early detection of breast cancer is related to more favorable patient outcomes. When the cancer is localized to the breast, at the time of diagnosis, 90% of women can expect to survive five years, however when regional lymph nodes are involved only 70% will survive five years. When distant metastases are present at diagnosis only 10% of women will survive five years (Schifeling and Hamblin, 1991). Consequently, it is easy to see that early detection and thus early diagnosis and treatment are critical to reducing the mortality of breast cancer.
Early detection of breast cancer occurs primarily through three different methods. They include mammography, periodic physical examinations by health care personnel, and breast self examination. A baseline mammogram is recommended for all women ages 35 - 39. Mammograms are then recommended every one to two years for women between the ages of 40 - 49 and yearly after the age of fifty (American Cancer Society, 1987). It is also recommended that women under the age of forty have their breasts examined by a health professional at least once every three years and yearly after the age of forty. Breast self examinations however are recommended on a monthly basis for every woman over the age of twenty. Consequently, BSE offers the best chance of finding a lump or abnormality at the earliest possible time. In addition, a woman performing BSE on a regular basis incurs little to no expense and is at least eleven times more familiar with her breasts than any health professional. In fact, most breast lumps are found by the women themselves and 90 percent of breast lumps are not malignant. (American Cancer Society, 1989)

The American Cancer Society and the National Cancer Institute, along with many other health and women's organizations, have spent much time and effort encouraging women on the importance of performing breast self examination for the early detection of breast cancer. Literature
is available through the American Cancer Society on the how to and the whys of BSE. Women's magazines regularly publish articles on BSE. Television news shows will often have stories that highlight the importance of BSE. Although the value of breast self examination has been well documented and there seems to be a multitude of information available on how to perform the procedure, many women report that they do not perform breast self examinations. In fact, the National Cancer Institute has reported that only 35% or less of American women perform BSE at the recommended intervals. Furthermore, even fewer perform it with competency. Many women perform BSE but do not complete all of the recommended steps. Besides not performing BSE on a monthly basis, some women fail to cover the entire breast, and some women fail to use adequate pressure to examine the underlying breast tissue.

Problem Statement

The problem being addressed in this research project is that only a small percentage of women practice breast self examination, on a monthly basis, and with only a questionable level of proficiency. By not practicing BSE regularly and proficiently, there is a higher risk that an individual if diagnosed with breast cancer will be diagnosed at a later stage and thus have a poorer prognosis. Increased knowledge about
BSE, based on a one to one teaching program, should lead to the performance of proficient BSE at the recommended intervals.

**Purpose**

The purpose of this research project was to develop and implement a teaching program that would encourage women to perform breast self examination regularly and proficiently and to evaluate the effectiveness of that teaching program as evidenced by the continuation of the performance of the procedure after attending the educational program.

**Significance of the Study**

By developing a teaching program and then successfully implementing the program I hoped to positively affect the performance by women of breast self examination. Studies by Hailey, Champion, Celentano and Mamon and Zapka all indicate the need for a personalized one to one teaching program to affect the performance of breast self examination. The teaching program in this study encouraged women to not only perform breast self examination on a regular basis, but also to promote proficient breast self examination. Hopefully, this will lead to earlier detection of breast cancer and thus a better prognosis.
Chapter Two

Review of Literature and Conceptual Framework

Who performs BSE and why?

Haughey, et al. (1988) examined BSE frequency and the pathologic stage of the disease at diagnosis among 334 female breast cancer patients. Of the total, 130 indicated that they had practiced BSE prior to their diagnosis. These women were also tested on their ability to detect nodules in a silicone breast model. No hypotheses were given. A one page questionnaire was used that included items on demographic characteristics, circumstances surrounding the discovery of breast cancer, frequency and number of years of BSE practice prior to diagnosis, BSE technique, and delay in seeking medical assistance. Thirty-eight percent of the patients indicated that they performed BSE monthly prior to the diagnosis. Eighty-seven percent of the women reported that they had found their own breast lesions. The relationship between frequency of BSE and pathologic stage of the disease was not statistically significant but it did show a trend for those who practiced BSE to have earlier stage disease.

Rutledge and Davis (1988) examined breast self examination compliance in 248 women ages 18-75. A
questionnaire was developed by Davis that incorporated several previous studies. Since the reliability and validity were unknown, the items were treated individually in the data analysis. No hypotheses were identified by the authors. Thirty-one percent of the women stated they did not practice BSE. Fifty-four percent of the women identified that they practiced BSE less than once a month. Fifteen percent practice BSE on a monthly basis. Seven of the 28 variables accounted for 58 percent of the variance in compliance. The variables of interest were: having a reminder method; encouragement of family/friends; confidence in ability to do BSE; age (lower); physician interest in BSE compliance; disagreement that BSE causes unnecessary worry; and concern regarding breast cancer.

Shepperd, et al. (1990) investigated BSE frequency and quality and determinants of BSE practice in women of childbearing age. Two samples were used, with the first being women of childbearing age who were Medicaid recipients and had a high school education or less. They were identified as being of lower income and lower education brackets. The second sample was women of childbearing age who had private insurance and had a high school education or more. They were identified as being of higher income and higher education brackets. Seventy-one women of lower income were studied and 51 of higher income were studied. No hypothesis was
identified in this study. The instrument used was a questionnaire developed by Strauss, et al (1987) and addressed frequency of BSE, quality of BSE, knowledge of current BSE technique, attitudes, barriers to BSE, anxiety, and demographics. No reliability or validity was given for the questionnaire. Twenty-two percent of the lower income women reported that they regularly practiced BSE while 24 percent of the same group indicated they had never performed BSE. Only 19 percent of this group indicated that they performed all three components of the recommended technique. In addition, 19 percent of the upper income women indicated that they regularly practiced BSE and three percent stated they had never performed BSE. Twenty-one percent of the women in this group indicated that they used all three components of the recommended technique. The major variable predicting BSE performance for both groups was the perceived barrier index. The three barriers that were included in this index are: forgetting, exclusive reliance on medical personnel for breast exams, and low confidence in one's ability to perform BSE and they accounted for 67 percent of the variance. The higher the perceived barriers, the lower the likelihood of performing BSE.

Hailey (1987) attempted to identify psychosocial variables which discriminate examiners from non examiners in an effort to determine teaching methods that would appeal to a college
In this investigation, 230 college psychology students were surveyed. A questionnaire was developed from the literature. No reliability or validity was offered for the instrument nor was a hypothesis offered. The questionnaire separated the subjects into examiners (n=113) and non-examiners (n=117). The results of the study concluded that the majority of college women over the age of twenty did not perform BSE. In addition, most women gain initial exposure to BSE from a male physician but would choose to learn more about it in a person to person setting involving another woman. Women who already practice BSE were more interested in learning more about it than those who do not. The study concluded that reminding women about the need to perform BSE may increase compliance and that there was a positive association between being worried about breast cancer and the frequency with which BSE is performed.

Cole and Gorman (1984) identified factors that may influence Registered Nurses to be compliant with breast self examination. Ninety-three female R.N.'s were used in this study. No hypothesis was offered. A questionnaire was developed to survey individual practice of BSE, personal experience, knowledge, and attitudes toward breast cancer. Reliability of the tool was established through the test-retest method with a reliability coefficient of 0.93. Content validity was based on a review of the literature. The subjects were
divided into two groups, compliers (those who practice BSE with correct technique) and non compliers (those who use incorrect technique, practice BSE less than monthly, and those who do not practice BSE). Thirty percent were identified as compliers and 70 percent were non compliers. The compliers tended to be younger, more educated, and thought about getting breast cancer more often than their counterparts. Non compliers were more experienced and older. The non compliers rated the three reasons why they did not perform BSE as forgetfulness, fear of finding a lump, and not having enough time. A significant number of the non compliers had a positive maternal family history and had more experience with breast cancer patients.

Hirshfield-Bartek (1982) examined a high risk patient's personal perceptions regarding breast cancer and BSE. The researchers studied 25 women ages 29-76 with either Stage I or Stage II breast cancer, with or without node involvement, who were being seen for follow up appointments in a Radiation Therapy Department. Three hypotheses were offered: BSE practice is influenced by perceived susceptibility; BSE practice is influenced by perceived benefit; BSE practice is influenced by barriers. The tool used was a 32 item questionnaire that was modified from the studies of Stillman (1977) and Trotta (1980) so that it could apply to the population of women following breast cancer treatment. The tool measured three
independent variables: perceived susceptibility to cancer reoccurrence; perceived benefit from BSE; and barriers to BSE practice. Validity and reliability was based on the earlier studies done by Stillman (1977) and Trotta (1980). In addition, content validity was also assessed by a head nurse in radiation therapy, a staff nurse in radiation therapy, and a professor in nursing research. Seventy-two percent of the women reported monthly or more frequent practice of BSE. These women also had low knowledge scores about BSE. The women's perceived susceptibility to breast cancer was a more reliable indicator of BSE practice than was her knowledge of the disease or the technique. All the women except for one indicated they perceived a high benefit from BSE. Women who had low barrier scores were more likely to practice BSE.

Champion (1990) attempted to identify attitudinal variables that were related to frequency and total performance of BSE in 362 women aged 35 or older. Two hypotheses were presented. The first stated that present total performance (of BSE) will be significantly related the combination of past total performance, Health Belief Model variables, social influence, confidence, and knowledge. The second stated that the present frequency of BSE will be significantly related to the combination of past frequency, Health Belief Model variables, social influence, confidence, and knowledge. An instrument developed by Champion in 1984 was used to measure
attitudinal concepts. Instruments were also used to measure social influence, confidence, and knowledge and they were all previously developed by Ronis in 1985. Content validity was established for all scales by a panel of national experts and construct validity was obtained through factor analysis and multiple regression. Internal consistency reliability from the current data range from 0.64 to 0.89. Of the women in this study, only 17 percent indicated that they performed BSE every month and 30 percent stated they had not completed BSE during the past year. This study found that personalized teaching by a physician and a return recheck on breast self examination related to increased frequency of the BSE technique. Knowledge was not found to be correlated with frequency but with proficiency of performing BSE.

Lierman, et al (1990) used the Theory of Reasoned Action to predict the intention of 93 women age 52-90 to perform BSE and BSE frequency. Hypotheses were not identified. An instrument, the Beliefs and Attitudes Questionnaire, was developed from interviews and pilot testing. The instrument measured components of the Theory of Reasoned Action. The pilot project provided both content and face validity for the revised instrument. The investigators found that frequent performers had a more positive attitude toward BSE and evidenced stronger social normative influences. Intention to perform and actual performance of BSE had a correlation of .75.
Glenn and Moore (1990) investigated the relationship between a woman's practice of breast self examination, self concept, locus of control, and the knowledge of treatment options for breast cancer. They studied 235 women age 20-75 who were patients at a mammogram center. They indicated no hypotheses in their report. Three instruments were used in this study. The Tennessee Self Concept Scale contains 100 descriptive statements about which subjects rate themselves on a Likert scale. The test-retest reliability coefficient of the scale was reported as 0.80-0.90. The Multidimensional Health Locus of Control Scale contains 18 statements designed to assess how an individual perceives their control over health related issues. Reliability for this tool was reported as 0.83-0.86 when tested with a variety of samples. Concurrent and discriminant validity of both of the scales were established in previous samples. This study reported that 90 percent of the women stated that they performed breast self examination but only 31 percent on a monthly basis. Sixty-two percent reported that they were not sure they could detect an abnormality. The investigators reported positive, but weak, correlation's between the frequency of breast self examinations and self concept and locus of control. Subjects who practiced BSE more frequently had a higher self concept and were more aware of treatment options for breast cancer.
Lauver and Angerame (1988) developed a questionnaire to measure women's selected beliefs, attitudes, and frequency of BSE practice. Fifty-nine women completely filled out the questionnaire. The instrument used was a 55 item questionnaire that was designed by the authors with some previously constructed items being used with the original author's permission. Content validity of the instrument was assessed by 20 nurses in women's health care, oncology nursing, and post doctoral fellows. No hypothesis was offered. In this study, the majority of women stated that they were comfortable doing BSE (66 percent) and they felt it was effective way to screen for breast cancer (87 percent); yet, 70 percent of the women indicated it was not necessary to do BSE because they see their health care provider regularly. The women also indicated that forgetting and lacking competence were the major barriers to performing BSE.

**Proficiency of BSE**

Celentano and Holtzman (1983) developed a scoring system for establishing the proficiency of women in performing breast self examination and relates the system to self reported BSE frequency, BSE teaching, medical care utilization factors, and socio-demographic characteristics. Three hundred and eight Baltimore, Maryland women over the age of 18 were surveyed. No hypothesis was reported by the authors. The
tool used contained five summed scales used to determine BSE competency. The scales each contained steps included in proper performance of BSE. One coder scored all of the interviews and respondent scores were compared across interviewers to assure reliability. No accounts for validity were given. Seventy-six percent of the women reported performing BSE at least once during the past year. Thirty-five percent reported practicing BSE monthly. However, most of the women reported not performing BSE correctly. Of the women who reported performing BSE over the past year, 63 percent reported receiving instruction from a health professional. Those who performed BSE more often were those who had a higher perceived confidence in their ability to perform BSE. Women who lacked confidence in their ability to perform BSE correctly or who have not been instructed in BSE techniques, performed BSE less frequently and had less compliance in performance of the technique.

Lauver and Angerame(1988) studied the impact of different types of information on BSE frequency and thoroughness. Two hundred and four women volunteers were given instruction in BSE. Participants were randomly assigned interventions on the basis of pre intervention BSE frequency. All of the volunteers were interviewed at a three month follow-up period. The study found that perceived competence measures were inconsistently related to outcomes. The author
also suggests that sensory information may promote BSE thoroughness among those with prior BSE experience.

Wyper (1988) examined the relationship of variables derived from the Health Belief Model to the practice of BSE. Two hundred and three women were surveyed using the Champion (1985) questionnaire. The investigator found that one's perceived confidence in the ability to perform BSE correctly was one of the most significant predictors of BSE practice. Those who practice BSE were more likely to perceive themselves as being susceptible to cancer, knew more about cancer, were more confident in their ability to perform BSE, had learned BSE by multiple methods, and were encouraged by someone close to practice BSE.

Saunders (1987) examined what variables influenced the maintenance of BSE proficiency. Three groups, each containing 30 women were given a BSE training program. The program was followed by a post test including an examination of their own breasts and a lump implanted model. The women were also given a lump implanted model to take home for practice. The three groups were then reevaluated at three, six, and nine months respectively. The three month group was more thorough in the examination of their own breasts, but all groups did well with the model. In addition, a second experiment was run in which the six month group was
compared to a group which received the teaching program but did not receive the model to take home. Those who had received the model had a greater retention of proficiency. The author indicated that any teaching program should involve a follow up visit sometime between three and six months so that retraining can be delivered at this time, if it is necessary.

Education

Mamon and Zapka (1985) developed, implemented, and evaluated the effectiveness of a breast self examination education program. In this study, 1,682 college age women were taught BSE in a group education session conducted in a classroom or in workshops. The teaching sessions included discussions on the need for BSE, viewing a film on cancer and how to perform BSE, a demonstration by the facilitator to review the technique, and opportunities for the participants to practice and demonstrate the procedure on models. The women were tested both pre intervention and six months after the program. No hypothesis was offered by the authors. A written questionnaire was mailed to the participants six months after the intervention. Proficiency was measured by a 19-item proficiency index derived from National Cancer Institute and American Cancer Society recommended criteria for the performance of BSE. The results indicated that targeted interventions have a significant impact in increasing the
proportion of women who are currently performing BSE or are performing BSE on a reasonably routine basis.

Beaman (1988) investigated the long term effectiveness of a specialized breast cancer education program compared to routine BSE education. In this study, 148 women were separated into two groups. Seventy-one women in the experimental group participated in a breast cancer detection program which included classroom instruction. At a subsequent visit, the participants met with an RN for a breast examination, had a review of personal breast cancer risk, and a discussion of the importance of mammogram. The RN also provided instruction on BSE which included feedback and simulated practice. The other 77 women in the comparison group received instruction as part of a routine breast examination. No hypothesis was offered by the author nor were validity or reliability for the teaching tools given. The results indicated that those women who received the special education had increased knowledge of the signs and symptoms of breast cancer and the breast self examination technique. In addition, the frequency of BSE practice in the special education group did not change significantly.

Heyman et al. (1991) investigated the effects of an instructional program, designed to teach nurses BSE, on their level of self practice and their level of teaching hospitalized patients. The sample was 102 medical surgical nurses. They
were separated into a control and an experimental group. The experimental group attended a structured class on how to teach BSE. The class was one hour in length and included audio visual, didactic, and interactive sections. A questionnaire was distributed to both the control and experimental groups six weeks after the class. No hypothesis was offered by the investigators. The questionnaire was developed by the investigators to measure nurses' knowledge, attitudes, self practice, and patient teaching of BSE. Content validity was obtained by a review of five clinicians. Test-retest reliability was 0.49. The results indicated that the nurses in the experimental group taught significantly more patients BSE in the month following the class, however their own self practice did not significantly increase.

Shamian and Edgar (1987) did a study to determine the relationship of nurses teaching BSE to healthy subjects. Two hundred and twenty-three women participated in BSE teaching days at a hospital facility. The teaching program consisted of a twenty minute film explaining BSE and pap smear, breast model, breast cancer risk factor charts, posters with signs and symptoms of breast cancer, one to one teaching by nurse clinicians, group sessions to discuss perceptions and attitudes towards BSE, explanation of the various breast tests and the procedures involved, and anatomy and physiology of the breast to facilitate understanding of the body. The following
hypotheses were offered by the author: 1) Nurses will have a positive impact on clients factual knowledge base regarding the signs and symptoms of breast cancer; 2) Nurses will have a positive impact on clients knowledge base of the steps in performing BSE; and 3) Nurses will have a positive impact on client frequency of practice of BSE. A 21 item questionnaire, was used that included four subscales: demographics; factual knowledge; proficiency of knowledge; and frequency of practice knowledge. Content validity was obtained at 0.75 or higher. Reliability was obtained by testing the instrument among four groups of subjects. The actual reliability was not given. The subjects completed the questionnaire at three separate times, before the teaching program, immediately after the education, and six months later. The results indicated that the subjects knowledge went from 47 percent pre teaching to 72 percent post teaching. The pre teaching knowledge base regarding steps of BSE ranged from 68 to 80 percent and rose to 88 to 100 percent post teaching. Prior to teaching, 13 percent of the women stated they practiced BSE regularly and after the program 52 percent of the women stated they practiced BSE regularly.

Education has been identified in many studies as a factor in the performance of breast self examination. Champion (1990) and Celentano and Holtzman (1983) identified personalized teaching with a recheck of retention to be
important. Saunders (1987) also identified the need for a return recheck to allow for retraining if necessary. Shamian and Edgar (1987) found that a teaching program increased the rate of practice from 15 percent to 52 percent and almost doubled the knowledge base of some women. Wyper identified that those women who had increased rates of practice of breast self examination were those who were more educated on breast cancer.

Perceived susceptibility was also identified in many studies (Hailey, Hirschfield-Bartek, Wyper) as a factor determining practice of BSE. Education on breast cancer, that includes information on the risk factors, on the incidence and mortality, and on treatment options will increase an individuals perceived susceptibility.

Several studies (Rutledge, Sheppard, Lauver, Celentano, Wyper) have identified lacking confidence as a reason for not practicing BSE. By increasing an individual's knowledge base and allowing adequate practice of the technique, an individual should develop increased confidence in the procedure and with a resultant increased rate of practice.

**American Cancer Society Guidelines**

The American Cancer Society (1989) recommends that every woman over the age of twenty perform breast self examination on herself once a month. It is recommended that
pre menopausal women do BSE a week after their period. Women who are no longer menstruating or who do so irregularly should pick the same day every month to perform BSE. It is not important as to what day, but it should be the same day every month. This is to allow for the changes that occur in the breast over a period of a month.

The procedure for performing breast self examination is not difficult. It involves the woman beginning lying down with a pillow under her right shoulder. The right arm should be placed behind her head. The finger pads of the three middle fingers of the left hand are then used to feel for lumps or thickenings in the right breast. It is important that enough pressure is used to allow the woman to palpate the underlying deep breast tissue. The entire breast needs to be examined including the area immediately under the arm. There are three most common ways to move around the breast. The "circle" involves starting with small circles around the areola and continuing in circles outward until the entire breast is examined. Some woman prefer using the "up and down" method where the breast is examined in up and down consecutive lines. The "wedge" method is accomplished when the breast is separated into wedges and each wedge is examined separately. The left breast should be examined in the same way. It is also recommended that the woman stand in front of the mirror. The woman should examine her breasts
to see if there are any changes in the way her breasts look. This includes dimpling of the skin, redness, or swelling or changes in the nipples including any discharge. Performing BSE while in the shower is also recommended. The soap allows the hands to glide over the skin easier. Women are reminded that any lumps, thickening in the skin tissue, changes in the nipple or discharge, and any other changes should be reported to her health care provider right away.

**Conceptual Framework**

The conceptual model used for this research project is Neuman's Health Care Systems Model for Nursing (Neuman (1989). In her model, Neuman focuses on the total person and sees an individual as a client system. Each individual is considered to be an open system that is striving to maintain a carefully balanced equilibrium while constantly interacting with a variety of variables from its environment. The system is seen as having a central core or central structure which is considered to be the energy source. Surrounding the core are lines of resistance which help to protect the core from the stressors of the environment. These lines of resistance help to maintain harmony between the central core and the environment. Together these lines of resistance form the normal line of defense. The line of defense allows a normal range of responses to the environment in order to maintain a
wellness state. The line of defense is developed over a period of time through previously learned methods of coping with stressors. The normal lines of defense remain relatively stable. Surrounding the normal line of defense is another line which Neuman refers to as the flexible line of defense. This line is likened to an accordion in that it can expand and contract. This line can change on a day to day basis due to variables such as amount of sleep one has had or the individual's current nutritional status.

Neuman (1989) proposes that each individual client responds to a variety of stressors, each differing in its potential to disturb the client's lines of defense. When a stressor breaks through the line of defense, the client system will react to the stressor in an effort to maintain the wellness state. The degree of the reaction will be determined by the interrelationships of the variables involved. Primary prevention in this model is accomplished through reducing the possibility of interaction of the client with stressors and to strengthen the line of defense in an effort to reduce or stop a reaction to the stressor.

Breast Cancer is a potential stressor to all women. In fact, breast cancer as a stressor will pose a particular challenge to a client system. It has the potential to greatly endanger a woman's lines of defense. This will cause the client system to react strongly in an effort to maintain the wellness state. Primary prevention against this stressor can be initiated
through the performance of breast self examination. Through this research project, I developed and implemented a teaching program that encouraged women to perform breast self examination regularly and proficiently. Educating women about breast cancer, the importance of early detection, and the correct practice of breast self examination was a way to strengthen an individual's normal line of defense through reducing the possible stressor of cancer. A woman who practices BSE may develop cancer but if it is detected early, the strength of the stressor will be reduced. In addition, increasing an individual's knowledge base on the subject of breast cancer will also strengthen their normal line of defense against this stressor. Possessing more knowledge about breast cancer would better prepare a client system that encountered it and would thus allow the system to be more prepared to react to the stressor.

Research Questions

1. Will the subjects who are given a one to one teaching program on breast self examination and a pamphlet on the procedure (Group I), perform the procedure more frequently than those subjects who receive only the same pamphlet (Group II)?
2. Will the subjects in Group I perform breast self examination more proficiently than those in Group II?

3. Will the subjects in Group I perform breast self examination more frequently than those subjects who receive neither the teaching program nor the pamphlet (Group III)?

4. Will the subjects in Group I perform breast self examination more proficiently than those in Group III?

5. Will the subjects in Group II perform breast self examination more frequently than those in Group III?

6. Will the subjects in Group II perform breast self examination more proficiently than those in Group III?

Definition of Terms

Breast Cancer. A malignant neoplasm of the breast.

Breast Self Examination. A procedure in which an individual examines his/her own breast tissue on a monthly basis in an effort to detect changes in the breast tissue.
Recommended Frequency of Breast Self Examination. The performance of breast self examination at the intervals recommended by the American Cancer Society.

Proficiency of Breast Self Examination. The performance of breast self examination as recommended by the American Cancer Society. Proficiency will be measured by the individuals examining all of the areas recommended, both thoroughly and completely.
Chapter Three

Methodology

Population and Sample

The population studied was women over the age of 20 (the age at which performance of breast self examination is recommended on a monthly basis), who were members of an HMO with no previous personal history of breast cancer. Women who identified that they had a prior personal history with breast cancer were not included in the study. A convenience sample was used and was drawn from the group of women who were patients at a satellite clinic of an HMO. The subjects were identified from those women visiting the clinic who identified to their primary care provider, during their yearly physical or pelvic examination, that they did not perform breast self examination. The primary care providers asked those women who identified that they do not perform BSE if they would like to participate in a research project on breast self examination. After their visit was completed, the researcher then approached those women who agreed to participate, and offered a more detailed explanation of the project. At that time, an informed consent was obtained (see
Appendices A, B, and C).

Design

The design of this research was an experimental design. There were two treatment groups and a control group. Treatment Group I received personalized one to one instruction on breast self examination with the researcher, a registered nurse. Since the researcher taught each subject, this allowed for control of what was taught. These women also received a copy of the American Cancer Society pamphlet entitled, "How To Do Breast Self Examination", for their personal use. Treatment Group II received only a copy of the same pamphlet. The control group received neither instruction nor the pamphlet. There was a total n of 60, with 20 in each group. The women were all tested three months after becoming a participant in the study for performance of the procedure. The subjects were then placed in either one of the treatment groups or the control group through random assignment. The placement was determined through a flip of the coin. When the first woman was identified, for participation in this project, a coin was flipped. It was heads and the woman was placed in a treatment group. If it was tails, the woman would have been placed in the control group. Since a treatment group was determined, the coin was again flipped and it was tails. The first subject was placed in Group II. If it has been heads, she
would have been placed in Group I. Thereafter, subjects were sequentially assigned into the next group (III, I, II). The data was collected from approximately January 1, 1992 to August 30, 1992, at which time 20 subjects in each group had two visits. Resulting in a final N of 60.

**Interventions**

Prior to any intervention demographic data was obtained for each subject in all three groups (see Appendix D). The subjects in each group were also tested for their baseline knowledge of breast self examination. This included their current level of proficiency of the technique.

Treatment Group I received a one to one teaching program given by the researcher. The program included: information on morbidity and mortality of breast cancer; a review of the recommended American Cancer Society guidelines for the early detection of breast cancer; and a review of the risks factors. A demonstration on a breast model of the procedure for breast self examination was then given. The women were then asked to give a return demonstration of the procedure on the model. A lump implanted breast model was also available. The subjects were given the lump implanted model to examine, in order to become familiar with how a breast lump feels. The subjects were given the opportunity to ask questions. They were also given the
American Cancer Society pamphlet entitled, "How to Do Breast Self Examination" (see Appendix H). This pamphlet was given to serve as a reminder of the need to perform breast self examination and it also was a reference for the subjects if they had questions after the intervention was completed. The intervention took place in an exam room in the clinic. On completion of the study, subjects were given the opportunity to contact the researcher if they had any questions or encountered any difficulties.

Group II received the pamphlet developed by the American Cancer Society entitled, "How to Do Breast Self Examination." These subjects were informed that the pamphlet contains information on performance of breast self examination. They received no instruction from the researcher.

The control group received no intervention. These subjects received neither the instruction program nor the pamphlet from the American Cancer Society.

All groups were called back at the end of three months. At this time, the subjects were asked questions about the frequency of their performance of breast self examination (see Appendix E). They were also asked to demonstrate the procedure on the breast model in an effort to check for proficiency (see Appendix F).

After the post test, the subjects in Group I received retraining on BSE in the areas in which they were less
proficient. The subjects in Group II received the one to one teaching program. In addition, after the post test those in Group III were given the one to one teaching program and were also given the pamphlet entitled, "How To Do Breast Self Examination".

Teaching Program

The subjects in treatment Group I received a one to one teaching program with the researcher. Each subject was brought into an exam room individually and was given a copy of the American Cancer Society pamphlet entitled, "How To Do Breast Self Examination." Appendix G is an outline of the specific teaching program that was given.

Two breast models were present in the room. One model was of normal breast tissue. The other was a lump implanted breast model. The researcher demonstrated the correct procedure on the normal model. As the researcher performed the various steps of the procedure, she also stated the steps. This way the subjects heard the steps and saw it being performed correctly on the model. The steps are those recommended by the American Cancer Society (1984) as outlined in their pamphlet, "How To Do Breast Self Examination." (see Appendix H). The subjects were also taught to check their breasts while standing in front of a mirror.

After the demonstration, the subjects were asked to
perform the procedure on the model. They were allowed to use the pamphlet as a guideline. The subjects examined the lump implanted model to get a feel for how a lump may feel and they were given the opportunity to ask any questions of the researcher, while performing the procedure or afterwards.

The subjects were then called ten weeks after agreeing to participate in the study, to make an appointment for the follow up visit, which took place three months after the initial visit. During the follow up visit, the subjects were asked a few questions concerning the risk factors of BSE and the frequency of their performance of BSE (see Appendix E). They were then asked to demonstrate the procedure on the breast model. A tool was used, by the investigator (Appendix F), to rate the proficiency of the demonstration. To maintain consistency, the researcher was the only individual to rate the subjects on their ability to perform BSE on the model.

Assumptions

1. The subjects will answer the questions and will perform the procedure to the best of their ability.

2. The subjects have a desire to learn the procedure in an effort toward preventive health care.

3. Since the subjects were randomly placed in the three groups, it is assumed that there was no difference in the three groups pre intervention.
Limitations of the Study

The relatively small sample size of this study was a limitation. The fact that these women were all members of a HMO presupposes that they have health care insurance and thus have access to medical care on a regular basis. The results of this study may be generalized only to women who have access to regular medical care.

An additional limitation of this study was the fact that there was only a three month interval between teaching and retest. This relatively short interval did not allow for demonstration of long term change.

A possible bias associated with the self reporting nature of the recommended frequency questionnaire was also a recognized limitation.

Data Analysis

There were two tools used in this study to measure both proficiency of breast self examination and frequency of examination. They were both developed from the American Cancer Society pamphlets entitled, "How To Do Breast Self Examination" (American Cancer Society 1984) and "Special Touch: A Personal Plan of Action For Breast Health" (American Cancer Society 1984). Reliability was based on the expert preparation of these pamphlets. In addition, reliability and
validity were further established with the data collected during this study. The tool used to measure proficiency included the six steps to breast self examination as described in the American Society pamphlets. The subjects were rated on how many of these steps they completed each time they were tested. Therefore, the subjects had possible proficiency scores of zero to six. At the time of the second visit, the subjects were also asked three questions to determine the frequency of performance of breast self examination (see Appendix E). The questions allowed the researcher to determine not only how many times the subject performed the examination but also if the subject performed the breast self examination at the recommended time.

After the data was collected, statistical analysis techniques were utilized to analyze the results. Descriptive statistics were used to describe the subjects and the sample used. This was determined from the information gained on the demographic data. In addition, a Wilcoxin Rank Sum Test was used to analyze the results of the proficiency tests. The Wilcoxin Rank Sum Test is a nonparametric method used to investigate possible differences between two populations. It was used in this study because the data is at the ordinal level, the groups were independent, and because the data was not normally distributed. With the Wilcoxin Rank Sum Test the scores of the two samples are combined and are ranked from
smallest to largest. The ranks of the values from the treatment group is computed and the ranks of the values from the control group is computed. If the groups are of equal size and the sum of the ranks is roughly equal than the two groups are not different. If the sum of the ranks is not equal than the two groups are different in some way. In this study, the data related to proficiency was observed in matched pairs. Each subject had both a pre and post test score and these scores were matched. The within pair difference was computed by subtracting the first or pre treatment score (FS) from the second or three months post treatment score (SS). This score was labeled the difference in score (DS). Missing values for the DS were assigned the mean DS. The difference in scores were then ranked in order from largest to smallest. In order to test for a difference between the treatment groups and the control, the sums of values from the treatment group was computed and the sum of the ranks of values from the control group was computed. A two sample t-test was applied to the sum of the ranks to determine if the two groups are significantly different.

Human Subjects Rights

This study was approved, before the research was begun, by the Department of Nursing Human Subjects Rights Committee. The committee did specify that after the data was
collected the subjects in the control group should be offered the same information and instruction as those in the other groups. To comply with the wishes of the committee, at the completion of the study, those subjects in Group II were offered the one to one teaching program, and those subjects in Group III were offered the one to one teaching program as well as the pamphlet.
Chapter Four

Data Analysis

The subjects in this study were assigned to one of three groups. Group I received a personalized one to one teaching program on breast self examination. They also received a pamphlet entitled "How To Do Breast Self Examination". The subjects in Group II received only the same pamphlet. The subjects in Group III received no intervention. All of the subjects were tested before the intervention and again three months later for proficiency and frequency of breast self examination.

Demographics

The total N was 60. Of that number, 14 (23.38 %) subjects were between the ages of 20 and 29. An additional, 14 (23.38%) were between 30 and 39 years of age and 18 (30.06%) were between 40 and 49. Of the remaining, 14 (23.36%) subjects, 8 (13.36%) identified their age as being between 50 and 59, and 6 (10%) were age 60 or over.
Six (30%) of the subjects in Group I identified their age as being between 20 and 29. Two (10%) were between 30 and 39, and seven (35%) were ages 40 to 49. Four (20%) of the subjects were between 50 and 59 and one (5%) was age 60 or over.

Three (15%) of the subjects in Group II identified their age as being between 20 and 29. Six (30%) were between 30 and 39 and six (30%) were between 40 and 49 years of age. Three (15%) of the subjects were between 50 and 59 and two (10%) of the respondents stated they were age 60 or over.

Five (25%) of the subjects in Group III were between 20 to 29 years of age. Six (30%) were between 30 and 39. Five (25%) were age 40 to 49 and one (5%) was age 50 to 59. Three (15%) of the subjects in Group III were 60 years of age or older (see Table I).

In the total sample, 44 (73.48%) of the subjects were white, eleven (18.37%) were black, and three (5.01%) were Hispanic. In addition, one (1.67%) was Oriental and one (1.67%) identified as being middle eastern.

Fourteen (70%) of the subjects in Group I were white, three (15%) were black, and the remaining three (15%) identified themselves as Hispanic or Oriental.
Table 1

Numbers of Subjects in Various Age Categories in Total Sample.

Group I, Group II and Group III

<table>
<thead>
<tr>
<th>AGE</th>
<th>TOTAL SAMPLE</th>
<th>GROUP I</th>
<th>GROUP II</th>
<th>GROUP III</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=60</td>
<td>n=20</td>
<td>n=20</td>
<td>n=20</td>
</tr>
<tr>
<td>20-29</td>
<td>14(23.38%)</td>
<td>6(30%)</td>
<td>3(15%)</td>
<td>5(25%)</td>
</tr>
<tr>
<td>30-39</td>
<td>14(23.38%)</td>
<td>2(10%)</td>
<td>6(30%)</td>
<td>6(30%)</td>
</tr>
<tr>
<td>40-49</td>
<td>18(30.06%)</td>
<td>7(35%)</td>
<td>6(30%)</td>
<td>5(25%)</td>
</tr>
<tr>
<td>50-59</td>
<td>8(13.36%)</td>
<td>4(20%)</td>
<td>3(15%)</td>
<td>1(5%)</td>
</tr>
<tr>
<td>60 AND OVER</td>
<td>6(10.02%)</td>
<td>1(5%)</td>
<td>2(10%)</td>
<td>3(15%)</td>
</tr>
</tbody>
</table>
Fifteen (75%) of the respondents in both Group II and Group III were white. Three (15%) of Group II and five (25%) of Group III were black. The remaining two (10%) of Group II were either Hispanic or Oriental (see Table 2).

The total sample included 36 (60.12%) who were married, 10 (16.7%) single, and nine (15.03%) were divorced. There were four subjects (6.68%) who were widowed and one (6.67%) was separated.

Fourteen (70%) of Group I, 13 (65%) of Group II, and nine (45%) of Group III were married. Three (15%) subjects in Group I, two (10%) in Group II, and five (25%) in Group III identified themselves as being single. Three (15%) in Group I and four (20%) in Group II were divorced. The remaining one (5%) in that group identified as being separated. Group III included two (10%) divorced subjects, three (15%) were widowed, and one (5%) was separated (see Table 3).

The total sample included 29 (48.43%) Protestant, 23 (38.41%) Catholic, and two (3.34%) Jewish subjects. The remaining five (10.02%) identified as being of an "other" religious affiliation.

Eleven (55%) subjects in Group I identified their religious affiliation as being Protestant. Seven (35%) stated they were Catholic and two (10%) were Jewish. Twelve (60%)
Table 2

Numbers and Percentages of Subjects of Various Races in Total Sample, Group I, Group II and Group III

<table>
<thead>
<tr>
<th>RACE</th>
<th>TOTAL SAMPLE n=60</th>
<th>GROUP I n=20</th>
<th>GROUP II n=20</th>
<th>GROUP III n=20</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHITE</td>
<td>44 (73.48%)</td>
<td>14 (70%)</td>
<td>15 (75%)</td>
<td>15 (75%)</td>
</tr>
<tr>
<td>BLACK</td>
<td>11 (18.37%)</td>
<td>3 (15%)</td>
<td>3 (15%)</td>
<td>5 (25%)</td>
</tr>
<tr>
<td>HISPANIC</td>
<td>3 (5.01%)</td>
<td>2 (10%)</td>
<td>1 (5%)</td>
<td></td>
</tr>
<tr>
<td>ORIENTAL</td>
<td>1 (1.67%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MID. EASTERN</td>
<td>1 (1.67%)</td>
<td>1 (5%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OTHER</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 3

Marital Status of Subjects in Total Sample, Group I, Group II and Group III

<table>
<thead>
<tr>
<th>MARITAL STATUS</th>
<th>TOTAL SAMPLE (n=60)</th>
<th>GROUP I (n=20)</th>
<th>GROUP II (n=20)</th>
<th>GROUP III (n=20)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SINGLE</td>
<td>10 (16.7%)</td>
<td>3 (15%)</td>
<td>2 (10%)</td>
<td>5 (25%)</td>
</tr>
<tr>
<td>MARRIED</td>
<td>36 (60.12%)</td>
<td>14 (70%)</td>
<td>13 (65%)</td>
<td>9 (45%)</td>
</tr>
<tr>
<td>DIVORCED</td>
<td>9 (15.03%)</td>
<td>3 (15%)</td>
<td>4 (20%)</td>
<td>2 (10%)</td>
</tr>
<tr>
<td>WIDOWED</td>
<td>4 (6.68%)</td>
<td></td>
<td>1 (5%)</td>
<td>3 (15%)</td>
</tr>
<tr>
<td>SEPARATED</td>
<td>1 (1.67%)</td>
<td></td>
<td></td>
<td>1 (5%)</td>
</tr>
</tbody>
</table>
subjects in Group II were Protestant. The remaining eight (40%) were Catholic. Six (30%) subjects in Group III were Protestant, eight (40%) were Catholic, and two (10%) were Jewish. Four (20%) in Group III identified their religion as being "other" (see Table 4).

The subjects were all asked to identify their occupation. The occupations were then categorized into five groups. They were: professional; management; technical; housewife; and retired. The total sample included 20 (33.4%) subjects identified as being a professional, 23 (38.41%) who were in technical occupations and three (5.05%) had management positions. The sample also included eight (13.36%) who were housewives and six (10.02%) who were retired.

Seven (35%) of the subjects in Group I indicated they had a professional occupation. Eleven (55%) stated a technical field. One (5%) subject in Group I stated she was retired and one (5%) was a housewife.

Six (30%) subjects in Group II identified themselves as holding a professional job. Two (19%) stated management. Four (20%) in Group II identified with a technical occupation. Five (25%) subjects in Group II were housewives with the remaining three (5%) being retired.
Table 4

Religious Affiliation of Subjects in Total Sample, Group I, Group II and Group III

<table>
<thead>
<tr>
<th>RELIGION</th>
<th>TOTAL</th>
<th>GROUP I</th>
<th>GROUP II</th>
<th>GROUP III</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=60</td>
<td>n=20</td>
<td>n=20</td>
<td>n=20</td>
</tr>
<tr>
<td>PROTESTANT</td>
<td>29(48.43%)</td>
<td>11(55%)</td>
<td>12(60%)</td>
<td>6(30%)</td>
</tr>
<tr>
<td>CATHOLIC</td>
<td>23(38.41%)</td>
<td>7(35%)</td>
<td>8(40%)</td>
<td>8(40%)</td>
</tr>
<tr>
<td>JEWISH</td>
<td>2(3.34%)</td>
<td>2(10%)</td>
<td>2(10%)</td>
<td></td>
</tr>
<tr>
<td>OTHER</td>
<td>6(10.02%)</td>
<td></td>
<td></td>
<td>4(20%)</td>
</tr>
</tbody>
</table>
Seven (35%) subjects in Group III were professional. Eight (40%) were technical. One (5%) subject in Group III identified as holding a management position. Housewife and retired each were identified by two (10%) of the subjects in Group III (see Table 5).

The total sample included 25 (41.75%) subjects who had attended some college, seven (11.69%) had an undergraduate degree, and four (6.68%) had attended graduate school. Those that completed high school account for 21 (35.07%) subjects and three (5.01%) subjects in the total population had between seven and eleven years of education.

Eight (40%) of the subjects in Group I stated that their highest level of education was a high school diploma. Six (30%) had some college. Two (10%) had an undergraduate degree. Three (15%) had attended graduate school. One (5%) respondent in Group I stated her highest level of education was between seven to eleven years of school.

Nine (45%) subjects in Group II had completed high school. Seven (35%) had some college and three (15%) had undergraduate degrees. One (5%) subject went to graduate school.

Four (20%) of the subjects in Group III had high school diplomas. Twelve (60%) had attended some college and two
Table 5

Numbers and Percentages of Subjects in Occupation Categories of Total Sample, Group I, Group II and Group III

<table>
<thead>
<tr>
<th>OCCUPATION</th>
<th>TOTAL SAMPLE n=60</th>
<th>GROUP I n=20</th>
<th>GROUP II n=20</th>
<th>GROUP III n=20</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROFESS.</td>
<td>20 (33.4%)</td>
<td>7 (35%)</td>
<td>6 (30%)</td>
<td>7 (35%)</td>
</tr>
<tr>
<td>MGMT</td>
<td>3 (5.03%)</td>
<td>2 (10%)</td>
<td>1 (5%)</td>
<td></td>
</tr>
<tr>
<td>TECHNICAL</td>
<td>23 (38.41%)</td>
<td>11 (55%)</td>
<td>4 (20%)</td>
<td>8 (40%)</td>
</tr>
<tr>
<td>HOUSEWIFE</td>
<td>8 (13.36%)</td>
<td>1 (5%)</td>
<td>5 (25%)</td>
<td>2 (10%)</td>
</tr>
<tr>
<td>RETIRED</td>
<td>6 (10.02%)</td>
<td>1 (5%)</td>
<td>3 (15%)</td>
<td>2 (10%)</td>
</tr>
</tbody>
</table>
(10%) had an undergraduate degree. The remaining two (10%) in Group III indicated their highest level of education was between seven to eleven years of school (see Table 6).

**Prior History of Cancer**

The subjects were asked, "Have you ever had cancer?". Of the 60 respondents only two answered yes, one each in Groups I and II. These were both cases of skin cancer. The subjects were then asked, "Has any member of your family been diagnosed with breast cancer?". Three (15%) subjects in Groups I and II and five (25%) in Group III answered yes to this question (see Table 7). They were then asked "who"? In Group I, one subject identified grandmother, one identified a grandfather, and one identified a cousin. In Group II, one subject identified her mother as having a history of breast cancer and two subjects identified their Aunt. In Group III, mother, daughter, and sister were all identified by one subject each. Two subjects in Group III identified as having aunts who have had breast cancer (see Table 8).

**Frequency**

At the time of the post test, all of the subjects were asked, "How often have you examined your breasts in the last three months?". The possible answers were: never, once,
Table 6

Highest Level of Education of Subjects in Total Population, Group I, Group II and Group III

<table>
<thead>
<tr>
<th>EDUCATION</th>
<th>TOTAL SAMPLE</th>
<th>GROUP I</th>
<th>GROUP II</th>
<th>GROUP III</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=60</td>
<td>n=20</td>
<td>n=20</td>
<td>n=20</td>
</tr>
<tr>
<td>&lt; SIX</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>7-11</td>
<td>3 (5.01%)</td>
<td>1 (5%)</td>
<td>9 (45%)</td>
<td>2 (10%)</td>
</tr>
<tr>
<td>H.S.</td>
<td>21 (35.07%)</td>
<td>8 (40%)</td>
<td>7 (35%)</td>
<td>4 (20%)</td>
</tr>
<tr>
<td>COLLEGE</td>
<td>25 (41.75%)</td>
<td>6 (30%)</td>
<td>7 (35%)</td>
<td>12 (60%)</td>
</tr>
<tr>
<td>DEGREE</td>
<td>7 (11.69%)</td>
<td>2 (10%)</td>
<td>3 (15%)</td>
<td>2 (10%)</td>
</tr>
<tr>
<td>GRAD.</td>
<td>4 (6.68%)</td>
<td>3 (15%)</td>
<td>1 (5%)</td>
<td></td>
</tr>
</tbody>
</table>
Table 7

Numbers of Subjects Who Identified a Family History of Cancer in Total Sample, Group I, Group II and Group III

<table>
<thead>
<tr>
<th>FAMILY MEMBER WITH CANCER?</th>
<th>TOTAL</th>
<th>SAMPLE N=60</th>
<th>GROUP I N=20</th>
<th>GROUP II N=20</th>
<th>GROUP III N=20</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td></td>
<td>11(18.37%)</td>
<td>3(15%)</td>
<td>3(15%)</td>
<td>5(25%)</td>
</tr>
<tr>
<td>NO</td>
<td></td>
<td>49(81.83%)</td>
<td>17(85%)</td>
<td>17(85%)</td>
<td>15(75%)</td>
</tr>
</tbody>
</table>
Table 8

**Family Member Identified as having Cancer in Total Sample, Group I, Group II and Group III**

<table>
<thead>
<tr>
<th>WHO HAD CANCER?</th>
<th>TOTAL SAMPLE</th>
<th>GROUP I</th>
<th>GROUP II</th>
<th>GROUP III</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=60</td>
<td>n=20</td>
<td>n=20</td>
<td>n=20</td>
</tr>
<tr>
<td>GRANDMOTHER</td>
<td>1(1.67%)</td>
<td>1(5%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MOTHER</td>
<td>2(3.34%)</td>
<td></td>
<td>1(5%)</td>
<td>1(5%)</td>
</tr>
<tr>
<td>DAUGHTER</td>
<td>1(1.67%)</td>
<td></td>
<td>1(5%)</td>
<td></td>
</tr>
<tr>
<td>SISTER</td>
<td>1(1.67%)</td>
<td></td>
<td></td>
<td>1(5%)</td>
</tr>
<tr>
<td>AUNT</td>
<td>4(6.68%)</td>
<td>2(10%)</td>
<td>2(10%)</td>
<td></td>
</tr>
<tr>
<td>OTHER</td>
<td>2(3.34%)</td>
<td>2(10%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NO ANSWER</td>
<td>49(81.83%)</td>
<td>17(85%)</td>
<td>17(85%)</td>
<td>15(75%)</td>
</tr>
</tbody>
</table>

Note: Of the two subjects in Group I who indicated other, one stated grandfather and the other stated cousin.
twice, and three or more. Of the subjects in Group I, ten (50%) indicated twice and seven (35%) indicated three or more. Three (15%) subjects in Group I indicated they had performed breast self examination once in the past three months (see Table 9). The mean performance frequency in Group I was 2.25 times during the three month interval.

In Group II, seven (35%) subjects indicated three or more and five (25%) stated twice. Seven (35%) stated once and one (5%) stated she never performed BSE in the three months. The mean performance frequency in Group II was 1.9 times during the three month interval.

Ten (50%) subjects in Group III indicated they examined their breasts three times or more in the past three months. Six (30%) subjects stated twice. One (5%) stated once and three (15%) subjects in Group III stated they never performed breast self examination in the past three months. The mean performance frequency in Group III was 2.25 times during the three month interval (see Table 10).

The subjects were also asked, "When did you perform the examination?" Seven (35%) subjects in Group I indicated the first day of each month. Ten (50 %) indicated the week after her period. One (5%) subject indicated the same day each month. Of the remaining two (10%), one (5%) indicated no set date, and one (5%) indicated she was unsure. Six (30%
Table 9

*Frequency of Performance in Total Sample, Group I, Group II and Group III Over a Three Month Interval*

<table>
<thead>
<tr>
<th>FREQUENCY</th>
<th>TOTAL</th>
<th>GROUP I</th>
<th>GROUP II</th>
<th>GROUP III</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=60</td>
<td>n=20</td>
<td>n=20</td>
<td>n=20</td>
</tr>
<tr>
<td>NEVER</td>
<td>4(6.68%)</td>
<td>1(5%)</td>
<td>3(15%)</td>
<td>3(15%)</td>
</tr>
<tr>
<td>ONCE</td>
<td>11(18.37%)</td>
<td>3(15%)</td>
<td>7(35%)</td>
<td>1(5%)</td>
</tr>
<tr>
<td>TWICE</td>
<td>21(35.07%)</td>
<td>10(50%)</td>
<td>5(25%)</td>
<td>6(30%)</td>
</tr>
<tr>
<td>THREE OR MORE</td>
<td>24(40.08%)</td>
<td>7(35%)</td>
<td>7(35%)</td>
<td>10(50%)</td>
</tr>
</tbody>
</table>
Table 10

Mean Performance of Breast Self Examination among subjects in Group I, Group II and Group III during a Three month Interval.

<table>
<thead>
<tr>
<th>GROUP</th>
<th>MEAN PERFORMANCE OF BSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>2.25</td>
</tr>
<tr>
<td>II</td>
<td>1.9</td>
</tr>
<tr>
<td>III</td>
<td>2.25</td>
</tr>
</tbody>
</table>
subjects in Group II indicated they performed BSE the week after their period, one (5%) stated the first day of each month, and five (25%) indicated the same day each month. Seven (35%) had no set date, and one (5%) subject in Group II was unsure. Of the subjects in Group III, seven (35%) indicated the week after their period and three (15%) indicated the same day each month. Seven (35%) had "no set date." and three (15%) were "unsure".

Other Breast Self Examination Teaching

At the time of the second visit, the subjects were all asked if they had some other form of breast self examination teaching during the three month interval between the two visits. Only one subject answered yes. She was in Group III. This subject works in a technical field, but is also a student at the University. She indicated to the researcher that she had visited the Health Center at the University where she was taught breast self examination.

Proficiency

In this study, the data related to proficiency was observed in matched pairs. Each subject had both a pre and post test score and these scores were matched. The within
pair difference was computed by subtracting the first or pre
treatment score (FS) from the second or three months post
treatment score (SS). This score was labeled the difference in
score (DS). Missing values for the DS were assigned the mean
DS. The difference in scores were then ranked in order from
largest to smallest. In order to test for a difference between
the treatment groups and the control, the sum of the rank of
values from the treatment group was computed and the sum of
the ranks of values from the control group was computed. The
test of significance is a two sample t-test applied to the ranks.

Using the Wilcoxin Rank Sum test, Group I was compared
to Group II, Group I was compared to Group III, and Group II
was compared to Group III. Group I had a mean SS of 4.500.
The mean FS of this group was 1.8571 with a DS mean score of
3.2143. Group II had a mean SS of 3.9474. The mean FS of
this group is 2.5294 with a DS mean of 1.5294. Group III had a
mean SS of 3.7778 with a FS mean of 3.2222. The means DS in
this group was 0.5556 (see Table 11).

When Group I was tested with Group II, the mean of
Group I was 22.2858 and the mean of Group II was 10.8235.
This resulted in a T value of 4.48. This indicated a p = 0.0002
(see Table 12)
Table 11

Score Means for Groups I, II, and III

<table>
<thead>
<tr>
<th>GROUP</th>
<th>N</th>
<th>VAR</th>
<th>N</th>
<th>MIN</th>
<th>MAX</th>
<th>MEAN</th>
<th>STD DEV</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>20</td>
<td>SS</td>
<td>20</td>
<td>2</td>
<td>6.5</td>
<td>4.5</td>
<td>1.3572</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FS</td>
<td>14</td>
<td>1</td>
<td>5</td>
<td>1.8571</td>
<td>1.0995</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DS</td>
<td>14</td>
<td>0</td>
<td>5</td>
<td>3.2143</td>
<td>1.3688</td>
</tr>
<tr>
<td>II</td>
<td>20</td>
<td>SS</td>
<td>19</td>
<td>2</td>
<td>6</td>
<td>3.9474</td>
<td>1.2235</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FS</td>
<td>17</td>
<td>1</td>
<td>3</td>
<td>2.5294</td>
<td>1.2805</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DS</td>
<td>17</td>
<td>0</td>
<td>3</td>
<td>1.5294</td>
<td>0.8745</td>
</tr>
<tr>
<td>III</td>
<td>20</td>
<td>SS</td>
<td>18</td>
<td>2</td>
<td>6</td>
<td>3.7778</td>
<td>1.1659</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FS</td>
<td>18</td>
<td>1</td>
<td>6</td>
<td>3.2222</td>
<td>1.3086</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DS</td>
<td>18</td>
<td>-1</td>
<td>3</td>
<td>0.5556</td>
<td>1.0417</td>
</tr>
</tbody>
</table>
Table 12

Results of T-test Comparison of Ranks of Scores of Group I and Group II

<table>
<thead>
<tr>
<th>GROUP</th>
<th>N</th>
<th>MEAN</th>
<th>STD DEV</th>
<th>STD ERROR</th>
<th>MIN</th>
<th>MAX.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>14</td>
<td>22.2858</td>
<td>8.2502</td>
<td>2.2049</td>
<td>2.5</td>
<td>30.5</td>
</tr>
<tr>
<td>2</td>
<td>17</td>
<td>10.8235</td>
<td>5.3646</td>
<td>1.3011</td>
<td>2.5</td>
<td>22</td>
</tr>
</tbody>
</table>

VARIANCE  T   DF   PROB >T
UNEQUAL   4.48  21.5  0.0002  *
EQUAL     4.66  29   0.0001  *

*p. <.05
When comparing Group I to Group III, Group I had a mean of 24.1071 and Group III had a mean of 10.5833. This resulted in a T of 6.142. This resulted in a p=0.0001 (see Table 13).

When comparing Group II to Group III, Group II had a mean of 22.5882 and Group III had a mean of 13.6667. This resulted in a T of 3.0734. This indicated a p=0.0043 (see Table 14).

Research Questions

1. Will the subjects who are given a one to one teaching program on breast self examination and a pamphlet on the procedure (Group I), perform the procedure more frequently than those subjects who receive only the same pamphlet (Group II)?

Those subjects who were given a personalized one to one teaching program on breast self examination and a pamphlet entitled, "How to Do Breast Self Examination" did perform the procedure more frequently during a three month interval than those who received only the same pamphlet.

2. Will the subjects in Group I perform breast self examination more proficiently than those in Group II?
Table 13

Results of T-test Comparison of Ranks of Scores of Group I and Group III

<table>
<thead>
<tr>
<th>GROUP</th>
<th>N</th>
<th>MEAN</th>
<th>STD DEV</th>
<th>STD ERROR</th>
<th>MIN.</th>
<th>MAX.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>14</td>
<td>24.1071</td>
<td>6.5197</td>
<td>1.7425</td>
<td>7.5</td>
<td>31.5</td>
</tr>
<tr>
<td>3</td>
<td>18</td>
<td>10.5833</td>
<td>5.7118</td>
<td>1.3463</td>
<td>1</td>
<td>23</td>
</tr>
</tbody>
</table>

VARIANCE     T     DF   PROB > T
UNEQUAL      6.142  26.1  0.0001*
EQUAL        6.247  30    0 *

*p < .05
Table 14

Results of T-test Comparison of Ranks of Scores of Group II and Group III

<table>
<thead>
<tr>
<th>GP</th>
<th>N</th>
<th>MEAN</th>
<th>STD DEV</th>
<th>STD ERROR</th>
<th>MIN</th>
<th>MAX</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>17</td>
<td>22.5882</td>
<td>7.8864</td>
<td>1.9127</td>
<td>8.5</td>
<td>34.5</td>
</tr>
<tr>
<td>3</td>
<td>18</td>
<td>13.6667</td>
<td>9.2641</td>
<td>2.1836</td>
<td>1</td>
<td>34.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VARIANCE</th>
<th>T</th>
<th>DF</th>
<th>PROB &gt; T</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNEQUAL</td>
<td>3.0734</td>
<td>32.7</td>
<td>0.0043*</td>
</tr>
<tr>
<td>EQUAL</td>
<td>3.059</td>
<td>33</td>
<td>0.0044*</td>
</tr>
</tbody>
</table>

* p < .05
The subjects in Group I did perform the procedure significantly more proficiently than those in Group II.

3. Will the subjects in Group I perform breast self examination more frequently than those subjects who receive neither the teaching program nor the pamphlet (Group III)?

The subjects in Group I did not perform the procedure more frequently over a three month interval than did those who received no intervention.

4. Will the subjects in Group I perform breast self examination more proficiently than those in Group III?

The subjects in Group I did perform the procedure more proficiently than did those subjects in Group III.

5. Will the subjects in Group II perform breast self examination more frequently than those in Group III?

The subjects in Group II did not perform BSE more frequently during a three month interval than did those in Group III.

6. Will the subjects in Group II perform breast self examination more proficiently than those in Group III?
The subjects in Group II did perform the examination more proficiently than did the subjects in Group III.
Chapter Five

Results

The results of this study indicate that both of the treatments made a difference in the proficiency levels of performance of breast self examination. Those subjects who received the one to one personalized teaching program on breast self examination and a pamphlet from the American Cancer Society entitled, "How to Do Breast Self Examination" were significantly more proficient after a three month interval, than those who received only the same pamphlet. In addition, those who received the teaching program and the pamphlet were significantly more proficient after a three month interval, than those who received no intervention. Those who received only the pamphlet were also significantly more proficient after a three month interval, than those who received no intervention.

The subjects in Group I performed BSE more frequently, on average, than those in Group II. The subjects in Group I however performed BSE, on average, about the same number of times as those subjects in Group III. The subjects in Group II actually performed BSE less frequently, on average, than those subjects in Group III. More subjects in Group III performed
BSE the recommended number of times, three, during the three month interval, than subjects in either Group I or Group II. Fifty percent of those in Group III indicated they performed BSE three or more times during the three month interval. Only 35 percent of Group I and 35 percent of Group II stated they performed BSE three or more times during the previous three months.

In this study, more of the subjects who received no intervention actually performed BSE the recommended number of times than did the subjects who received either of the two interventions. At the same time, these same subjects were less proficient than those who received the treatment. There are several possible reasons for this. It is possible that those who received no intervention could have had a spark of interest by just knowing they were in a study on BSE. This can be accounted for by the Hawthorne Effect. These subjects knowing they were in a study and yet not receiving an intervention may have caused them to become more aware and sensitive to any information on BSE. This includes media attention given to the examination. Breast Self Examination is discussed numerous times in various forms, including women's magazines, television shows, novels, newspaper articles, and pamphlets. The subjects in Group III may have become more sensitive to these sources of information. The subjects in Group III also may have increased their frequency of breast self
examination because of their knowledge of participation in the study. The knowledge might have served as a reminder that they need to perform BSE. Although the subjects in Group III were reminded to perform BSE, they did not have the knowledge to perform it proficiently because they did not receive either the teaching program or the pamphlet.

After the post test, the subjects in Group II received the same one to one personalized teaching program as did those in Group I. In addition, the subjects in Group III received the teaching program and the pamphlet. It would be interesting to retest the subjects after another three months or six months to see if the level of proficiency is maintained in the two treatment groups. It would also offer an opportunity to clear up misconceptions and provide retraining if necessary.

**Limitations**

Although this study did find that the teaching program made a difference in the level of proficiency, it is recognized that this study has limitations. The sample size used in this study was relatively small. This study should be repeated using a much larger sample size.

The researcher also realizes that retesting after three months does not provide long term follow up of the results. In this study, the subjects were only tested once, after three months. A similar study where follow up was done at longer
intervals, perhaps at six months or one year, might help to indicate if the subjects maintain the level of proficiency and frequency and thus establish longer term results.

All of the subjects in this study were women who were members of an Health Maintenance Organization. These women were also identified for participation in this study during their yearly physical or pelvic examination. The subjects all had health insurance and since all were in for well visits, it indicates that they all do practice some sort of preventive health care. This may indicate that they are interested in their own wellness and in maintaining their health. Therefore, the results of this study cannot be generalized to the general population. Many women do not have health insurance and many do not practice regular preventive health care such as having regular pelvic or physical examinations.

In addition, any woman with a positive personal history of breast cancer was excluded from this study. Any woman who has had breast cancer is dealing with different stressors than women who have not been faced with breast cancer.

Another limitation of this study is the morbidity rate. This study originally had 25 subjects in each group, with a total N of 75. Only 20 subjects in each group were tested twice, with a final total N of 60. This study had a 20 percent morbidity rate. Many of the women who were lost could not be reached
by the researcher. There was at least five attempts to call each subject to arrange for a return visit. Many of them had phone numbers that were wrong or disconnected. Messages were left for some subjects who failed to return them. One possible explanation for the drop out rate is that the regional location where the data collection took place is known as a transient area. Many individuals move here for short periods of time and then move to other cities or towns. In addition, the morbidity rate may be explained to a degree by the fear some women have about breast cancer. A percentage of women do not want to learn about breast cancer or BSE because of this fear. The researcher also recognizes that some women do not want to, or see the need to, take an active part in their health care and as such did not value the need for a revisit.

**Literature Review**

The findings of this study support the findings of several other researchers. Several studies indicate that education is a factor in the performance of breast self examination. In the study by Champion (1990), it was concluded that personalized teaching by a physician and a return recheck was related to increased frequency of the BSE technique. This current study seemed to support this concept. All of the subjects stated they did not perform BSE prior to the study but at the time of the recheck, frequency did increase in all groups. In addition,
those subjects who received the personalized teaching program practiced BSE more often than those who received only the pamphlet.

Celentano and Holtzman (1983) concluded that women who have not been instructed in the BSE technique, performed BSE less frequently and had less compliance in performance of the technique. This current study supports the study by Celentano and Holtzman. The subjects in this study who were not instructed on the performance of BSE, performed it less proficiently than those who did receive the teaching program. In addition, the subjects in this study who received the teaching program, performed BSE more frequently than those who received only the pamphlet on BSE.

Saunders (1987) recommended that any BSE teaching program should involve a follow up visit sometime between three and six months so that reteaching could be done at that time. This research did include a follow up visit at three months. At this follow up visit, the subjects who received the teaching program were retaught, as necessary, in areas in which they were not proficient. The subjects who received the pamphlet also were given the teaching program after the post test. The subjects who were in the control group also received the one to one teaching program and the pamphlet after the post test. This research supports the need for further follow up at six months, and possibly one year, at which time the women
could be given any retraining that is necessary.

In the study by Shamian and Edgar (1987), 223 women participated in BSE teaching days at a hospital facility. The women were taught about BSE in several different modes. The result of this study showed that after the teaching program 52 percent of the women stated they practiced BSE regularly; while before the program, only 13 percent stated they practiced BSE regularly. Their knowledge about BSE also increased from 47 percent pre teaching to 72 percent post teaching. The subjects were tested before teaching, immediately post teaching, and six months later. The current study supports the findings of these researchers. It would be interesting to again test the subjects at six months as did Shamian and Edgar to see if their level of proficiency has changed.

The study by Rutledge and Davis (1988) indicated that 31 percent of the subjects did not practice BSE and 54 percent practiced BSE less than once a month. All of the subjects in Group I of this study did perform BSE at least once during the three months. In addition, 35 percent performed BSE the recommended number of times during this study. Rutledge and Davis indicated confidence in ability to perform BSE was related to performance of the examination. This study supports those findings. The subjects who received the teaching program all examined their breast at least once and
35 percent did it the recommended number of times.

The study by Hailey (1987) indicated that women would rather learn more about BSE in a one to one person setting involving another woman. The researcher in this current study was a woman who provided one to one teaching on BSE. The positive results from this study would support Hailey's findings. Hailey also concluded that reminding women about the need to perform BSE may increase compliance. This may help to explain the increase in frequency in the control group. The subjects in this group knew they were in a breast self examination study. This may have been enough of a reminder to motivate those subjects to perform breast self examination.

Mamon and Zapka (1985) concluded that targeted interventions have a significant impact in increasing the proportion of women who perform BSE. This study supports their conclusions. The women who received both interventions had a significant increase in their performance of BSE.

Beaman (1988) concluded that women who received specialized teaching had increased knowledge about the BSE technique. This study supports that conclusion. The women in this study who received the personalized one to one teaching program had a significantly higher proficiency level than those who did not receive the special education program.
Recommendations

This study should be repeated to determine if the same positive results can be replicated. It would be beneficial to increase the number of subjects in a future study. This study had a relatively small N of sixty. It would be interesting to see if similar results were obtained with a larger subject population.

This study should also be repeated using different populations of women. In this study, all of the women were members of an HMO who expressed some interest in participating in their own health care. It would be interesting to repeat the study with women who had no health insurance or perhaps in women who do not express an interest in their own health care.

The current study excluded women with a positive personal history of breast cancer. An area for further study might be to give the same teaching program to women who have already been a victim of breast cancer, to determine if similar results can be seen.

An area for future research may be a similar study, where all three groups were again tested at six months and one year intervals. This would allow the researcher to determine if the subjects who received the teaching program had maintained their level of frequency and proficiency; to see if the subjects in Group II had increased their proficiency and frequency; and
to see if the subjects in Group III had maintained or improved their level of frequency while increasing their proficiency.

It is also important for other studies to be done utilizing different teaching methods. This would help to determine what other teaching methods might result in similar results. A one to one teaching program only allows one nurse to teach one woman. Group classes with a Registered Nurse might yield similar results and allow more women taught at one time.

Studies should also be done using different types of teachers. In the current study, the teacher was a female Registered Nurse, other studies might utilize Licensed Practical Nurses or perhaps a female physician.

**Conceptual Framework**

The conceptual framework for this study was Neuman's Health Care Systems Model. In Neuman's model, primary prevention is accomplished through reducing the possibility of interaction with stressors, and by strengthening the line of defense so it can react to these stressors. This study has shown that educating a woman about breast cancer, the importance of early detection, and the correct practice of breast self examination will increase both the frequency and proficiency of the examination and thus strengthen her normal line of defense. In addition, knowledge about breast cancer and its early detection reduces the possible stressor of breast cancer.
In conclusion, a woman who practices BSE regularly and proficiently may develop cancer but if it is detected early the strength of the stressor will be reduced and the woman's line of defense will be better prepared to guard against the stressor.
Appendix A
Informed Consent Treatment Group I

code _____

I am a graduate nursing student at the University of Nevada at Las Vegas, studying ways to encourage women to perform breast self examination in an effort toward early detection of breast cancer. You are being asked to participate in this study. Should you decide to participate, I will first observe you performing an exam on a breast model and inquire how often you perform breast self examination. You will then be provided with some facts about breast cancer and the correct procedure for performing breast self examination. You will also receive a pamphlet developed by the American Cancer Society entitled "How To Do Breast Self Examination," which will give some information and directions on the technique. This pamphlet is yours to keep and take home with you.

Three months later, you will need to return to the clinic. At that time, I will again observe you performing an exam on a breast model and will inquire how often you perform breast self examination. This will also give you an opportunity to review any areas and ask any questions you may have. If you agree to participate in this project, you will need to make two visits with me. The first will be today, or can be rescheduled if you like, and the second will be three months later. Each visit should take no longer than 45 minutes to one hour.

All data collected from this study will be kept confidential. The questionnaires will be kept in a locked box. There is only one key to the box, which I possess. The questionnaires will be kept separate from the consent forms to maintain confidentiality. All data will be reported as group data. No names will be used. Codes will be used on the data
collection tools to collate the data collection tools belonging to the same subject.

There is no risk to you by participating in this study. You may withdraw at any time without fear of consequences in terms of your health care provider. You will benefit from this study by learning about breast self examination and early detection of breast cancer.

Upon completion of the study, the results will be available to you. If you would like to obtain these results please contact Theresa Scalzo, R.N. B.S.N., through the University of Nevada at Las Vegas, Department of Nursing, phone number 739-3360.

I have read the above and hereby give my consent to participate in the described research project.

______________________________
(participant)

______________________________
(witness)

______________________________
(date)
Appendix B
Informed Consent Treatment Group II

code _____

I am a graduate nursing student at the University of Nevada at Las Vegas, studying ways to encourage women to perform breast self examination in an effort toward early detection of breast cancer. You are being asked to participate in this study. Should you decide to participate, I will first observe you performing an exam on a breast model and inquire how often you perform breast self examination. You will then be given a pamphlet entitled, "How To Do Breast Self Examination." This pamphlet was designed by the American Cancer Society in order to provide some information on breast cancer and to give directions on the performance of breast self examination. This pamphlet is yours to keep and take home.

Three months later, you will need to return to the clinic. At that time, I will again observe you performing an exam on a breast model and inquire how often you perform the breast self examination. This will also give you an opportunity to review any areas and ask any questions you may have. If you agree to participate in this project, you will need to make two visits with me. The first will be today or can be rescheduled if you like, and the second will be three months after the first. Each visit should take no longer than 45 minutes to one hour.

All data collected from this study will be kept confidential. The questionnaires will be kept in a locked box. There is only one key to the box, which I possess. The questionnaires will be kept separate from the consent forms to maintain confidentiality. All data will be reported as group data. No names will be used. Codes will be used on the data
collection tools to collate the data collection tools belonging to the same subject.

There is no risk to you by participating in this study. You may withdraw at any time without fear of consequences in terms of your health care provider. You will benefit from this study by learning about breast self examination and early detection of breast cancer.

Upon completion of the study, the results will be available to you. If you would like to obtain these results please contact Theresa Scalzo, R.N., B.S.N. through the University of Nevada at Las Vegas, Department of Nursing, phone number 739-3360.

I have read the above and hereby give my consent to participate in the described research project.

________________________
(participant)

________________________
(witness)

________________________
(date)
Appendix C
Informed Consent Group III

I am a graduate nursing student at the University of Nevada at Las Vegas, studying ways to encourage women to perform breast self examination in an effort towards early detection of breast cancer. You are being asked to participate in this study. Should you decide to participate, I will first to observe you performing an exam on a breast model and inquire how often you perform breast self examination.

Three months from today, you will need to return to the clinic. At that time, I will again observe you perform an exam on a breast model and inquire how often you perform breast self examination. If you agree to participate in this project you will need to make two visits with me. The first will be today or can be rescheduled if you like, and the second will be three months after the first. Each visit should take no longer than 45 minutes to one hour.

All data collected from this study will be kept confidential. The questionnaires will be kept in a locked box. There is only one key to the box, which I possess. The questionnaires will be kept separate from the consent forms to maintain confidentiality. All data will be reported as group data. No names will be used. Codes will be used on the data collection tools to collate the data collection tools belonging to the same subject.

There is no risk to you by participating in this study. You may withdraw at any time without fear of consequences in terms of your health care provider.
Upon completion of the study, the results will be available to you. If you would like to obtain these results please contact Theresa Scalzo, R.N., B.S.N. through the University of Nevada at Las Vegas, Department of Nursing, phone number 739-3360

I have read the above and hereby give my consent to participate in the described research project.

______________________________________________________
(participant)

______________________________________________________
(witness)

______________________________________________________
(date)
### Appendix D

**Demographics**

Please check the box in each category which best describes you?

<table>
<thead>
<tr>
<th>Age</th>
<th>Race</th>
<th>Marital Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-29</td>
<td>White</td>
<td>Single</td>
</tr>
<tr>
<td>30-39</td>
<td>Black</td>
<td>Married</td>
</tr>
<tr>
<td>40-49</td>
<td>Hispanic</td>
<td>Divorced</td>
</tr>
<tr>
<td>50-59</td>
<td>Oriental</td>
<td>Widowed</td>
</tr>
<tr>
<td>60-69</td>
<td>Middle Eastern</td>
<td>Separated</td>
</tr>
<tr>
<td>70+</td>
<td>Other</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Religion</th>
<th>Occupation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protestant</td>
<td>What is your occupation? <em>(please state)</em></td>
</tr>
<tr>
<td>Catholic</td>
<td></td>
</tr>
<tr>
<td>Jewish</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Highest level of education completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>up to six years</td>
</tr>
<tr>
<td>7-11 years</td>
</tr>
<tr>
<td>completed high school</td>
</tr>
<tr>
<td>some college</td>
</tr>
<tr>
<td>undergraduate degree</td>
</tr>
<tr>
<td>graduate school</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Have you ever had cancer?</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Has any member of your family been diagnosed with breast cancer?</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>If you checked yes to question 8, who?</th>
</tr>
</thead>
<tbody>
<tr>
<td>grandmother</td>
</tr>
<tr>
<td>mother</td>
</tr>
<tr>
<td>daughter</td>
</tr>
<tr>
<td>please specify</td>
</tr>
</tbody>
</table>
Appendix E
Recommended Frequency

(10) Which of the following are risk factors of breast cancer? (Check all that apply)

- over the age of 65 _____
- Close family member with breast cancer _____
- First child born before the age of 25 _____
- Menopause before the age of 30 _____
- Injury to the breast_____ 
- Having no children ______

(11) How often have you examined your breasts in the last three months?
never _____ once_____ twice _____ three or more ___

(12) Do you have periods? yes ____ no ______

(13) When did you perform the examination?
the week after my period _____
first day of each month _____
same day each month _____
no set date ___
unsure ______
Appendix F
Proficiency of Breast Self Examination

<table>
<thead>
<tr>
<th>Right</th>
<th>Left</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

1. Lying flat on back with pillow under the side being examined.

2. Same side arm under the head

3. Use fingerpads of the three middle fingers of opposite hand.

4. Feel each breast firmly and move around the breast in a set way i.e. a) circle, b) up and down lines, c) wedge

5. Feel the area between the breast and the armpit.

6. Examine the breasts in front of mirror. Noting any dimpling of the skin, changes in the nipple, redness or swelling.
Appendix G
Outline For Teaching Program

I. Morbidity and Mortality

1. One in nine women will be diagnosed with breast cancer in her lifetime.
2. Second only to lung cancer as the cause of death of American women.
3. There are approximately 143,000 new cases and 43,000 deaths each year due to breast cancer.
4. No reliable method of prevention. Therefore, early detection is our best defense.
5. Early detection leads to more favorable outcomes.
   a. stage I - 90 percent survival rate at five years
   b. stage II - involvement of regional lymph nodes, 70 percent survive five years.
   c. stage IV - distant metastases only 10 percent survive five years.

II. American Cancer Society Guidelines for early detection

1. Mammograms
   a. baseline for all women between the ages of 35-39
   b. Every one to two years for women between the ages of 40-49.
c. Yearly for women after the age of fifty.

2. Breast examination by a health professional
   a. once every three years for women under the age of forty.
   b. yearly after the age of forty.

   a. monthly for all women over the age of twenty.
   b. If a woman examines her breasts monthly, she is at least eleven times more familiar with her breast tissue than any health professional.

III. Risk factors.

1. age women over the age of 65
2. history of breast cancer in close family relatives (mother, sister, grandmother, aunt)
3. late age at menopause
4. onset of menstruation before the age of 12
5. older than 30 years at birth of first child
6. never giving birth
7. obesity- women 40 percent or more above normal weight.

IV. When to perform BSE.

1. monthly
2. If a woman has periods - the week after her period, every month.
3. If she is not having periods - any day of the month, but the same day each month.

V. Breast Self Examination Procedure.
1. The procedure is begun while lying down. A pillow is placed under the right shoulder and the right arm is placed under your head.
2. Use the finger pads of your three middle fingers on your left hand to feel for lumps or thickening. Your finger pads are the top third of each finger.
3. Press firmly enough to know how your breast feels. If you are not sure how hard to press, ask your health care provider or try to copy the way your provider uses the finger pads during a breast examination. Learn what your breast feels like most of the time. A firm ridge in the lower curve of each breast is normal.
4. Move around the breast in a set way. You can choose from either the "circle, "the up and down line", or the "wedge". Do it the same way every time. It will help you make sure you have examined your entire breast area, and try to remember how your breast feels every month.
5. Now examine your left breast using the right hand finger pads.

6. If any lumps or thickenings are noticed, you doctor should be informed right away.

VI. Breast exams in front of a mirror.

1. done every month
2. look in the mirror and examine your breast.
3. stand with your arms down and observe.
4. lean forward and place your hands on your hips and tighten your chest muscles.
5. Note any changes in the way your breasts look.

   Dimpling of the skin, changes in the nipple, redness or swelling, and nipple discharge all need to be reported to your health care professional right away.

VII. Performing BSE in the shower is also helpful. Soapy hands glide more easily over the breasts, making it easier to check how your breasts feel.
Appendix H

American Cancer Society Pamphlet

"How To Do Breast Self Examination"

(see pocket)
Appendix I

University of Nevada at Las Vegas
Department of Nursing

I, ________________ hereby give permission for Theresa Scalzo RN, BSN, a graduate nursing student at the University of Nevada at Las Vegas, to access my patients from the period of January 1, 1992 to May 31, 1992. I understand that my patients will be participating in a research project aimed at increasing both the frequency and proficiency of breast self examination performance.

__________________________
(signature)

__________________________
(title)

__________________________
(date)
Bibliography


995B


How To Do
Breast Self Examination
ERE IS ONE OF THE BEST WAYS TO PROTECT YOURSELF FROM BREAST CANCER AND PUT YOUR MIND AT EASE. THE OTHER TWO WAYS ARE A BREAST EXAM BY A DOCTOR OR SOMEONE TRAINED TO DO IT AND A BREAST X-RAY (MAMMOGRAM).
**WHY DO THE BREAST SELF-EXAM?**

There are many good reasons for doing the breast self-exam (BSE) each month. One reason is that breast cancer is most easily treated and cured when it is found early. Another is that if you do BSE every month, it will increase your skill and confidence when doing the exam. When you get to know how your breasts normally feel, you will quickly be able to feel any change. Another reason, it is easy to do.

**WHEN TO DO BSE**

The best time to do BSE is about a week after your period, when breasts are not tender or swollen. If you do not have regular periods or sometimes skip a month, do BSE on the same day every month.

1. Lie down and put a pillow under your right shoulder. Place your right arm behind your head.
2. Use the finger pads of your three middle fingers on your left hand to feel for lumps or thickening. Your finger pads are the top third of each finger.
3. Press firmly enough to know how your breast feels. If you’re not sure how hard to press, ask your health care provider, or try to copy the way your health care provider uses the finger pads during a breast exam. Learn what your breast feels like most of the time. A firm ridge in the lower curve of each breast is normal.
4. Move around the breast in a set way. You can choose either the circle (A), the up and down line (B), or the wedge (C). Do it the same way every time. It will help you to make sure that you’ve gone over the entire breast area, and to remember how your breast feels each month.

**FOR ADDED SAFETY:**

You might want to check your breasts while standing in front of a mirror right after you do your BSE each month. See if there are any changes in the way your breasts look, dimpling of the skin, or changes in the nipple, redness or swelling. You might also want to do an extra BSE while you’re in the shower. Your soapy hands will glide over the wet skin making it easy to check how your breasts feel.

**REMEMBER:** BSE could save your breast—and save your life. Most breast lumps are found by women themselves, but, in fact, most lumps in the breast are not cancer. Be safe, be sure.