BREAST SELF-EXAMINATION: KNOWLEDGE AND PRACTICES OF HEALTH CARE PROFESSIONALS

A THESIS

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To the Provost of the Graduate School:

I am submitting herewith a thesis written by Billie Ramsire entitled "BREAST SELF-EXAMINATION: KNOWLEDGE AND PRACTICES OF HEALTH CARE PROFESSIONALS." I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts with a major in Health Education.

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This descriptive-correlation study was undertaken in order to determine if there was a relationship between level of knowledge, frequency of practice, and proper performance of breast self-examination among health care professionals. A sample of 100 subjects (20-56 years of age), selected at random from a major medical institution, completed a four part questionnaire which served as the research instrument. Data were analyzed using frequency distribution tables, Pearson Product Moment Correlation and Spearman Rho Rank Order correlation. Analysis of data revealed a high correlation between knowledge of breast examination and proper performance of breast self-exam. A moderate or significant correlation was also found between frequency of breast exams and knowledge of BSE. No significant correlation existed between frequency of breast self-examination and proper performance.

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CHAPTER 1

INTRODUCTION

The American Cancer Society (1984) stated that one of 11 women will develop breast cancer during her lifetime and that breast cancer is the number one cancer killer of women. The mortality for breast cancer has remained unchanged for the past 40 years.

Hill and Todd (1976) found that although mammography and xerography are being used to improve the detection rate of breast cancer during clinical examination, a substantial body of medical opinion regards breast self-examination (BSE) monthly, by the woman herself, as the most advantageous approach currently available. They argue that BSE costs nothing and can be carried out with a frequency quite beyond the scope of any other conceivable mass screening program. BSE is therefore viewed by many as the most effective method of detecting early breast changes.

Magarey (1978) found in a study on women in New York that almost a quarter of the sample detected their own breast cancers. The study further stated that women should be encouraged to examine their own breasts monthly and report any changes immediately to a physician. Evidence, however, suggests that many women do not practice BSE or

that they practice it ineffectively. The main reasons for nonpractice according to Rose (1978) and Stillman (1977) are ignorance of technique of BSE, fear and anxiety of what might be detected, and lack of knowledge or confusion in the practice of BSE. The available evidence therefore strongly suggests that there is a need to educate women further on the procedures necessary for effective BSE practice and the immediate and long term benefits of the early detection of breast changes.

Health care professionals are the usual source of information regarding health habits. Physicians, nurses, nutritionists, health educators, and others are called on to give accurate and appropriate information concerning maintenance of health. Their involvement with health education enables them to serve as role models for health related behaviors. The health care professionals may not consciously think of themselves as role models, but their interaction with the public has placed them in that position. Patients or clients take note of what they say, how they act, and what they do. Nurses in particular are ideally situated to take an educational role in BSE practice. They are frequently the first point of contact for many women entering the health care system and are in a position which allows for the building of close, trusting

relationships. However, evidence suggests that nurses are not practicing BSE frequently and are not teaching it with any regularity to their patients. Stillman (1977) found that only four women out of 122 learned about BSE from a nurse and concluded that office nurses and community health personnel, as well as hospital nurses, missed opportunities to teach health.

If nurses and other health care professionals are to become involved in teaching BSE, it is important to determine how widespread is their own practice of BSE. Since there is limited information on this issue, it is clear that more evidence is required about the percentages of health care professionals practicing BSE and the effectiveness of their practice.

Purpose of Study

The purposes of this study were to:

1. Determine the level of knowledge among health care professionals concerning breast self-examinations.

2. Determine the frequency of breast self-examinations among health care professionals.

3. Determine if health care professionals are performing breast self-examinations using the correct technique.

Statement of the Problem

The problem of this study was to determine if there is a relationship between level of knowledge, and the frequency and proper performance of breast self-examinations among health care professionals.

Rationale

The condition of the breast is a major health concern for women today. The breast is the primary cancer site in women, accounting for 27% of all cancers in females and affecting 9% of all women at some time during their life (American Cancer Society, 1984). It is also the leading cause of death among women in the 40-44 year old age group (Schlueter, 1982).

It is estimated that there will be 109,000 new cases of breast cancer each year with an annual death rate between 36-40,000 (American Cancer Society, 1985). However, health professionals feel that early detection and treatment of the disease could contribute significantly to increased survival rates (Bennett, Lawrence, Fleishman, Gifford, & Slack, 1983). If breast cancer is detected early and treated properly, an 85% to 90% survival rate could be achieved. The 5-year survival rate drops to 53% if cancer has spread

to the auxiliary lymph nodes (American Cancer Society, 1984).

Among the most important methods in the control of breast cancer are regular health check-ups and breast self-examination. In fact, breast self-examination has been shown to contribute extensively to early detection and diagnosis with subsequent increases in long-term survival rates (Schlueter, 1982). The procedure is also simple and cost free with no adverse side effects.

Breast exams should be done once a month following the menstrual cycle. After menopause, a regular schedule should be followed such as the first of every month (Harwood, 1983). If more women practiced breast self-examination and obtained medical advice when an abnormality was noted, breast cancer could be diagnosed more frequently before metastasis occurs.

No woman is immune from the possibility of breast cancer. All women should be aware of the importance of their own role in cancer detection. Nurses and other health care professionals should be influential in recognizing and explaining the importance of regular physical examinations and breast exams. They should set an example by doing breast exams and having regular check-ups. If they do not

personally practice these measures, they are less likely to teach others about them.

A coordinated effort, however, will be needed to decrease the cancer problem. As people become more informed, hopefully they will be better able to protect themselves.

Definition of Terms

The following definitions were used in the study:

1. Health Care Professional - anyone who has completed a course of study in a field of health, usually licensed or certified to provide health care services to consumers.

2. Breast Self-Examination (BSE) - Use of appropriate techniques of breast examination at regular monthly intervals.

3. Regular Physical Examination - A complete examination of the body by a physician with specific tests as indicated by the history or examination findings.

Hypotheses

The following null hypotheses were tested at the .05 level:

1. There is no significant relationship between level of knowledge concerning breast self-examination and the proper performance of breast self-examination.

2. There is no significant relationship between knowledge of breast self-examination and frequency of breast self-examination.

3. There is no significant relationship between proper performance and frequency of breast self-examination.

Limitations

The following limitations were recognized for the purpose of this study:

1. No control over population other than occupation, age, and sex.

2. Limited to only those willing to participate.

Delimitations

The following delimitations were recognized:

1. The study group was able to read English.

2. The study population consisted of female health care professionals 18 years of age and older.

3. The study population consisted of those individuals available at the time of the study.

Summary

This chapter has presented the problem of the present study which is an attempt to determine if there is a significant relationship between level of knowledge, and the

frequency and proper performance of breast self-examinations. The assumptions, hypotheses, definitions of terms, and limitations of the study were also presented.

CHAPTER 2

REVIEW OF LITERATURE

Breast Cancer

The condition of the breast is a major health concern for women today. The breast is the primary cancer site in women, accounting for 27% of all cancer in females (Brooks, 1982) and affecting 9% of all women at some time during their life (American Cancer Society 1984). It is the leading cause of cancer death among women representing 19% of the annual mortality rate of cancer (Scott, 1983). A further concern is that the mortality rate has not decreased in the past 40 years.

Anatomically, the breast or mammary glands are paired subcutaneous organs composed of 15-20 lobes with ducts extending from the lobes to a single papilla, the nipple. An extensive lymphatic system of the breast extends over the entire chest with communication occurring between the breasts. The major pathways of lymphatic drainage are the axillary, transpectoral, and internal mammary routes with the axillary route being the primary pathway. Regional metastases from breast cancer are most frequently found in the axillary nodes (Scott, 1983).

Physiologically, the breasts are endocrine targets in which hormone levels alter the physical and microscopic characteristics throughout a woman's lifetime. The alternations specifically occur during puberty, each menstrual cycle, pregnancy, and menopause (Townsend, 1980). Knowledge of these alterations is necessary to assess the breast adequately during self or clinical examination. Haagensen, Bodian, and Haagensen (1981) stated that the nodularity, sensitivity, and engorgement of the breasts before and during menstruation are factors responsible for the most frequent misdiagnosis of gross cystic disease or carcinoma.

Breast masses are common, but 80% of them are benign (American Cancer Society, 1984). The primary indicators for differentiating between benign and malignant masses are the age of the female and the physical characteristics of the mass. Fibrocystic disease and fibroadenoma occur more frequently in younger women, while intraductal papilloma, duct ectasia, and carcinoma are found primarily in older women (Townsend, 1980).

The etiology of breast cancer is unknown, but several risk factors have been identified by Leis (1980). They are as follows:

1. Age - 85% of breast cancers occur after age 45.
2. Sex - 99% of breast cancers occur in women.
3. Family history of breast cancer.
4. Precancerous mastopathies.
5. Previous benign breast disease, such as fibrocystic disease.
6. Previous cancer in one breast.
7. Adverse hormonal milieu as related to parity.
    a. Nulliparity.
    b. Menarche before age 12 years.
    c. Prolonged menstrual activity.

The age specific incident rate for breast cancer in women rises sharply after age 40 (Leis, 1980). Women who have female relatives with breast cancer have an increased risk which may range from 1.5 to 4.7 times higher than for women without similar family histories.

Women with certain types of cystic breast disease have between 1.7 and 5 times greater risk of developing breast cancer (American Cancer Society, 1984). Women with a history of previous breast cancer have a 5 times greater risk of developing breast cancer. Women with a history of previous breast cancer have an 8 times greater risk of developing a second primary cancer than the general population (Leis, 1980).Marital status and fertility also

appear related to the incidence of breast cancer. Nuns were found to have significantly higher rates of breast cancer than married women (Brooks, 1982). Women who are nulliparous have 3 times greater risk of developing breast cancer than their child-bearing counterparts; however, women whose first birth occurs after age 30 sustain a similar risk which increases after age 35 (Leis, 1980).

Length of menstral activity has been related to breast cancer incidence. Women in whom menstruation occurs before age 12 years or women with over 30 years of menstrual activity have 1.3 times increased risk of breast cancer (Leis, 1980). Women with natural menopause at 55 years or older have been found to have twice the breast cancer risk of those who experience menopause at age 45 (Trichopoilos, MacMahon, & Cole, 1982). Surgically induced menopause was associated with up to a 60% reduction in breast cancer risk compared with women with natural menopause (Trichopoilos et al., 1982). However, there is no firm evidence that contraceptives are associated with increased risk of breast cancer development in the general population (Helmich et al., 1983; Leis, 1980). There also is no reliable evidence to support an association between acute trauma and breast cancer development (Leis, 1980).

Efficacy of Breast Self-Examination

Because mammography can be utilized only on a restricted basis, early detection depends also on development of other modalities. Of the various screening methods, Strax (1980) believed breast self-examination has the greatest potential for detection of breast cancer. This belief is supported by the fact that women are the primary detectors of breast abnormalities, accounting for 90% of all breast cancers detected (Townsend, 1980).

In support of breast self-examination as a viable early detection modality, Foster et al. (1978) conducted a study to determine the effect of BSE performance on the clinical and pathological staging of breast cancer. Data collected from a Vermont Breast Cancer Registry involving 246 women with invasive breast cancer revealed the following: only 25% of the women practiced monthly BSE, 28% practiced less than monthly, and 47% never practiced BSE. Older women tended to perform BSE less frequently than younger women; a significant relationship was found between frequency of BSE performance and the earlier clinical stage of breast cancer; tumor diameter was less for those performing BSE monthly; and those performing BSE more frequently tended to have fewer positive lymph nodes.

Feldman, Carter, Nicastri, and Hosat (1981) documented further the value of BSE to provide stimulus for necessary educational and behavioral changes. They investigated 996 newly diagnosed breast cancer patients to determine the relationship of BSE performance to the stage of breast cancer at diagnosis. It was found that the regular practice of BSE was associated with a one-third reduction in the likelihood of positive nodes in diagnosis of the disease. In fact, 84% of the patients diagnosed with distant metastases never or rarely performed BSE. They also noted that higher educated, younger, married, premenopausal women were more likely to practice BSE.

Greenwald et al. (1978) examined the effects of BSE and clinical examinations by a physician on breast cancer diagnosis. They found 37.7% of 293 women with breast cancer detected their tumors in stage I by performing BSE compared to 27% who detected Stage I tumors accidentally. These authors concluded from additional findings that breast cancer mortality might be reduced by 18.8% to 24.4% through routine breast self-examination or examination by a physician.

Gray (1981) asserted that present data, though limited, supports the necessity for educating women in BSE behavior because nearly 50% of breast cancer will be discovered in

this manner. Gray also emphasized the importance of utilizing the modalities of mammography and annual physical examinations.

The importance of BSE and other screening methods has been established. Unlike the other modalities, BSE has the advantages of being cost free and generally without risk (Feldman et al., 1981). Also, BSE is convenient and provides monthly protection between regular clinical examinations.

Factors Affecting the Practice of Breast Self-Examination

Numerous studies that have been conducted examining women's BSE behavior indicate that while most women think BSE is an important technique, many are not doing it with any regularity. Stillman (1977) studied 122 women and found that only 40% perform monthly BSE, yet 20% of those not practicing rated the technique as very important. The predominant reasons given for not practicing BSE included being too busy, lack of knowledge about the procedure, and preferring not to think about it. A Gallup survey done in 1974 showed that 24% of the U.S. female population do monthly breast examinations; 46% stated that regular BSE practice would make them worry unnecessarily so they refuse to do it.

The National Institutes of Health (1980), in order to update the Gallup Poll, conducted a study among a national probability sample of 1,580 women to determine their knowledge, attitudes, and practices related to breast cancer. Ninety-six percent of the women surveyed stated they had heard of BSE as compared to 77% in 1974. Yet only 29% reported practicing BSE monthly during the past year. The predominant reason stated for not practicing BSE was lack of knowledge. The National Institutes of Health stated that even though a woman practices BSE monthly, but incorrectly, the value is minimal. Therefore, the respondents were asked to describe the steps utilized in performing BSE. A description of six steps was considered a thorough performance. Of all the women surveyed, 60% described at least three of the six steps, 30% described only two steps, and less than 10% were able to describe only one correct step. Regarding the source of BSE instruction, 64% of the women reporting monthly practice of BSE stated they received personal instructions by a doctor or nurse. Of the 29% BSE practitioners, 91% claimed to be confident in their performance ability.

In a study by Schlueter (1982) in which 273 women were interviewed, knowledge of breast cancer and benefits of breast self-examinations were explored in relation to

frequency of BSE practice. Results revealed that 37% practiced BSE regularly and no correlation was found between knowledge and beliefs about breast cancer and BSE behavior. This study attempted to also link BSE with other self-care strategies such as regular exercise. It was hypothesized that women who exercise regularly would be more inclined to take care of themselves with regular BSE but this was not found to be a factor. Molbo (1983), at the University Hospital of Washington, conducted a BSE program in which women were taught the technique as well as how to interpret what they found while palpating themselves. Molbo claimed an 80% compliance (based on telephone follow-up). Trotta (1980) surveyed frequency and thoroughness of BSE practice and found that 12% of her subjects had practiced BSE at least six times in the previous 6 months. Thoroughness of technique was not high. Most women were doing breast palpations only when lying down.

The issue of BSE competence was also addressed by Huguley and Brown (1981) in a study of 2,092 women with cancer of the breast. In this study, cancer among those who had practiced BSE was at an earlier stage than it was among those who had not used the method. While 65% of the patients felt their technique was satisfactory, nurses thought that only 57% of them were competent. Competent

examiners who practiced at least three times a year were more likely than those who practiced less frequently to have stage I disease or tumors smaller than 2 centimeters.

Howe (1980) studied 161 women who practiced BSE to determine the number of nodules they could find in a breast model to assess their competence in performing the examination correctly. She found that more than one-fourth of the women (20%) were unable to detect any of the nodules. Neither frequency nor length of experience practicing BSE was significantly related to ability. Self reports of BSE technique (part of hand used, type of motion, and firmness of pressure) were not highly correlated with observed technique, and the association between these reports of technique and number of nodules found in the model were not statistically significant.

Lynch (1978) determined that only 31 (22%) of 136 women who practiced BSE monthly were judged by physicians to have performed an adequate examination. The criteria the physicians used to evaluate the examination were not specified.

Keller, George, & Podell (1980) conducted a study involving 772 female patients, ages 25 to 65 years, to determine knowledge, attitudes, and behavior concerning breast self-exams during a 5 year period. They found that

99% of the subjects were aware of BSE and cited most often the physician as the source of instruction. Of the 76% taught by a physician, 69% stated the physician demonstrated the procedure. Of the 99% aware subjects, only 19% reported practicing monthly BSE. Reasons found for not performing BSE were forgetfulness, lack of knowledge, and lack of confidence. These researchers also found that subjects, who were confident in their ability to perform BSE, were more likely to practice it monthly.

Bennett et al. (1983) interviewed 616 women of whom 155 or 25% were nurses, physicians, or other health care professionals to explore factors that influence women's habits in the practice of BSE. Their results revealed that women were more likely to practice BSE on a frequent basis if they were living with their sexual partner, had been shown how to perform BSE, and were confident in their examination technique. Women with a maternal history of breast disease were more likely to practice monthly BSE. However, only 36% total reported monthly practice. Health care professionals did not differ in the proportion practicing monthly BSE.

The most thorough study of health care professionals was one involving registered nurses and conducted by Bayley, Cockran, Fatin, and Wilson (1980) in Australia. From a

sample of 47 RNs, 75.5% practiced BSE, but when proper technique was assessed the end result was only 11.1%. The effectiveness with which participants practiced BSE was determined by their questionnaire responses. To be classified as completely effective in their practice of BSE participants adhered to the following criteria:

1. Regularity - practice BSE every month or every other month.

2. Technique - use correct technique, that is, using opposite hand to breast, including area of axilla when performing exam, using a rotating movement and using the flat of fingers.

3. Observation - observe changes in the shape and contour of the breasts and condition of the nipples.

4. Position - use correct position lying flat or standing for small breasts.

5. Time - Practiced BSE 1-7 days after the menstrual cycle.

The two significant areas of failure were in the use of a mirror for accurate observation (88.9%) and in the time--69% did not examine their breasts at the correct time in relation to their menstrual period.

Turnbull (1978) studied 90 RN graduate students and found that 77% practiced BSE monthly or every 2-3 month.

Technique was not assessed. Turnbull also surveyed 70 non health related graduates at the same university and found that 72% reported they practiced BSE monthly or every other month. The common reason for not doing BSE in the RN group was forgetfulness. In the non health group it was lack of knowledge.

Women's knowledge of breast cancer and personal health practices were explored in a study by Nelson in 1975. The study included 50 nurses and 50 non nurses. A questionnaire developed from current literature on the subject of breast cancer and BSE was implemented. The study revealed no statistical difference in the frequency of physical examinations between nurses and non nurses. Approximately 30% of nurses compared to 34% of non nurses had yearly physicals. Nurses were more knowledgeable concerning the warning signals of cancer and the correct technique of BSE although the number practicing it did not differ with 22% of the nurses and 22% of non nurses performing monthly breast examinations.

Cole and Gorman (1984), in a hospital based study, surveyed 93 female nurses from a variety of specialty areas using a questionnaire about their practice of breast self-examination. Data revealed two distinct groups: compliers 30.1% and non compliers 69.6% based on the use of correct

monthly BSE technique. The non compliers were more likely to have a maternal history of breast cancer and thought less about getting the disease. The compliers had greater nursing education and were younger than the non compliers. No significant difference was found between the groups in knowledge level regarding breast cancer.

Haughey, Marshall, Mettlin, Nemoto, Kroldart, and Swanson (1984) examined the ability of nurses to detect nodules in breast models and found that approximately half of the nurses detected 50% or less of the nodules present in the models examined. Detection accuracy was not significantly related to demographic characteristics, the expertise of having taught BSE, experience in caring for breast cancer patients, or personal risk of the disease. Nurses who had had instruction in BSE since their basic education were more proficient than those who had not. Neither frequency of BSE nor reported technique had a significant effect upon detection skill.

Several studies have contributed to a theoretical framework for predicting the likelihood of an individual performing preventive health behaviors such as BSE. Kasl and Cobb (1966) identified two general factors: How an individual perceived the threat and the value of the behavior (dependent upon the perceived likelihood of the

actions being effective and the displeasure of the action versus sustaining the consequences). In other words, the probability of a woman practicing BSE depends upon her belief about the seriousness of breast cancer and susceptibility to the disease and the value of BSE in producing effective results.

Ben-Sira (1977) determined that attitude toward a disease is the most important factor in predicting preventative behavior. He identified four areas to determine the attitude. The individual must have (a) perceived susceptibility to the disease, (b) arousal of its salience to the individual creates some form of emotional distress, (c) knowledge about the disease, and (d) belief that this disease can be prevented. Both of these frameworks indicate that knowledge alone is not enough to promote BSE. One's own perceived personal susceptibility to breast cancer must be present as well as the belief that BSE is effective.

The health belief model studied by Rosenstock (1966), Hochbaum (1970) and Becker (1974) deals with the relationship between knowledge, beliefs, and perception in an individual's decision to take health actions. They proposed that an individual's readiness to take preventive action is influenced by the amount of vulnerability and

susceptibility felt toward a particular health problem and the individual's belief that engaging in preventive action will reduce the threat of disease. Recent expansion of this model gives weight to situational modifiers and personal motivation. Knowledge, beliefs, or perceptions alone are now believed to be incomplete foundations from which to generate desired behaviors.

There are a few studies available that relate self-concept to BSE, such as a study by Herold, Goodwin, and Lero (1979). They studied 486 women attending birth control and pregnancy counseling centers. The study revealed that subjects with high self-esteem had more positive attitudes toward birth control, were less embarrassed about obtaining contraceptives, and were more effective and consistent contraceptive users.

Hallal (1982) undertook a study in order to determine if there were differences in health beliefs, health locus of control, and self-concept of adult women who practiced BSE as compared to those women who do not. A sample of 207 women drawn from a variety of settings completed a four-part questionnaire. Analysis revealed differences between practitioners and non practitioners in terms of health beliefs, health locus of control, and self-concept. Specifically, analysis revealed that being a practitioner of

BSE was correlated with high levels of health beliefs and higher self-concepts levels. Practitioners tended to be less inclined to have a locus of control that depended on a powerful other.

Psychosocial factors were studied by Magarey and associates (1978) involving women with symptoms of breast disease. Their study revealed that conscious factors including fear of breast disease, fear of breast loss or dying, knowledge about cancer, age, and education did not influence the practice of BSE. Unconscious factors, especially ego defenses, such as denial and depression, were more significant in affecting positive health practices. The practice of BSE was related only to non-use of reaction formation, such as helpful discussion of breast symptoms with a sex partner and not with another female.

There are other studies that suggest women who engage in other health promoting activities would be more likely to practice BSE, possibly as a result of a tendency to assume responsibility for themselves. Bennett et al. (1983) interviewed 616 women to see if an association between medical preventive health behavior and more frequent practice of BSE existed. Contrary to their hypothesis that BSE practice was associated with the practice of other preventive health activities, the study did not demonstrate

such a relationship. Data revealed that these women were more likely to practice BSE on a frequent basis if they were living with their sexual partner, had been shown how to perform BSE, and were confident in their examination technique (Bennett et al., 1983). Also women with a maternal history of breast disease were more likely to practice monthly BSE. Unlike past reports that women with formal education beyond high school practice BSE more frequently than less educated women, their study revealed no association between monthly BSE practice and formal education. Turnbull's study involving health professionals demonstrated a positive practice of BSE and practices of other health measure in women up to 35 years of age, but not those over age 35. Women most often did not perform BSE because they forgot it, or they lacked the motivation.

Fink, Shapiro, and Roester (1972) examined the relationship between selected demographic characteristics and the number of breast screenings in which women participated. Several factors were found. Women who were more likely to participate in screening programs were: (a) under 60 years of age, (b) Jewish, (c) American born, (d) better educated, (e) better salaried, (f) employed in a professional job, (g) previously participated in other screening programs, and (h) concerned about breast cancer

(Fink et al., 1973). Unfortunately, the researchers made no effort to determine if these same women practiced BSE.

Trotta (1980) studied factors such as race, religion, socioeconomic status, age, and health beliefs to determine BSE compliance. She found that person-to-person teaching was the only factor that had significant correlation with frequency of practice. The number of women with breast cancer whom a woman knew correlated weakly with frequency.

Studies of factors thought to affect the frequency of BSE practice have yielded conflicting results as to whether BSE is influenced by perceived susceptibility to breast cancer, perceived benefit of BSE, and/or a fear of breast loss or cancer. These studies also disagree about whether race, age, socioeconomic status, or level of education affect the frequency of BSE practice. There is agreement that more frequent practice is associated with a greater degree of knowledge about BSE.

Summary

This chapter has concerned itself with breast cancer and the importance of early detection. Several aspects were discussed: An overview of breast cancer, the efficacy of breast self-examination, factors affecting the practice of breast self-examinations and a brief look at risk factors.

CHAPTER 3

PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

This chapter presents the procedure that was utilized for the collection and treatment of data. The relationship between level of knowledge, frequency of practice, and correct performance of breast self-examination among health care professionals was studied utilizing a descriptive correlational design. According to Polit and Hungler (1983), correlational research is an investigation that explores the interrelationship among variables of interest to the researcher. This chapter also describes the setting, population and sample, instrument, and methods used for the collection and analysis of data.

Setting

This study was conducted in one setting. Written permission was obtained from the administrator of a large health care institution to involve its staff and facility in the collection of data (Appendix A). The areas within the institution used for the purpose of this study were meeting rooms and lounges. No actual work areas were used.

Population and Sample

The population for this study consisted of 100 health care professionals employed at the Veteran's Administration Medical Center. They were all selected by convenience sampling which involves the selection of the most readily available subjects at the time of the study. The following criteria were used in the selection of the target population:

1. Female
2. Eighteen years of age or older
3. Able to read English
4. Licensed health care professional

The investigational phase of this study lasted about 2 weeks. Since all subjects were adults and the study was carried out in an educational setting, no human subjects review was required.

Instrument

The test tool for the investigation was a 4-part questionnaire developed by the investigator for the purpose of this study (Appendix C). The tool was developed from current literature on the subject of breast cancer and breast self-examination. Also, information from the American Cancer Society on breast self-examination was used.

The questionnaire related to knowledge, frequency of practice and actual performance of breast self-examination. It contained four parts. Section I contained demographic data including age, marital status, level of education, and other health practices relating to breast cancer. Section II was used to gather data relating to the frequency of breast self-exams. In Section III the respondent had to list the steps involved in breast self-examination, and for Section IV each participant had to perform the BSE procedure using a silicone breast model. A rater, trained in the breast self-examination technique, checked the participants as they went through the procedure of BSE.

Pretesting the Tool

The questionnaire was pretested to determine whether or not the questions were clear. The time necessary to complete the questionnaire was also determined. In the pilot study the population was selected according to the previously set criteria for the study and the test was conducted in a similar setting. Five health care professionals were selected by convenience sampling. No changes were made in any part of the questionnaire as a

result of the pretest. The time required to complete the questionnaire during the pretesting was 10 to 15 minutes.

Procedure for Collection of Data

The investigator contacted one major health care institution requesting permission to involve its staff in the study. A copy of the statement of problem, purposes of the study, methods for collection of data, and the questionnaire was given to the hospital's research committee. Written permission was obtained (Appendix A).

Health care professionals were requested to complete the questionnaire on a voluntary basis. Anonymity was insured as the questionnaire was not signed or coded so as to be associated with a particular person. The investigator identified herself as a graduate student at Texas Woman's University who was conducting a study relating to breast self-examination.

Each individual who agreed to participate was given a questionnaire to complete and directed to a conference room where she performed the BSE procedure using a silicone breast model. All subjects were informed of their right to decline and that whether or not they agreed to participate would in no way affect their job status. All questionnaires were collected by the investigator after completion.

Procedure for Analysis of Data

A frequency distribution table was developed on all demographic data and the scores for each question were tabulated. Two statistical tests, the Pearson Product Moment Correlation, a parametric test to measure relationships between variables and Spearman Rho, a non parametric test, were used to determine the relationship of the following: knowledge, frequency, and performance. For the purpose of this study the significance level was set at .05.

As stated earlier, Section I of the questionnaire contained demographic data. Section II contained data pertaining to the frequency of breast self-examination and contained two multiple choice questions. Question one dealt with frequency of breast exams performed by a medical doctor during a physical examination and the second referred to how often each individual performed the BSE technique.

Section III dealt with knowledge of BSE and contained three open-ended questions. A maximum score of 11 points and minimum of 0 were possible for this section. A scoring criteria was preset by the investigator. In the first question subjects were required to list the appropriate time for doing BSE, such as before or after the menstrual cycle. Only one point was given for the correct answer.

Question two pertained to knowledge concerning the procedure of BSE. Each participant had to list the steps used in BSE. There was a total of five correct listings. In the last part of Section III participants had to list the major warning signs of breast cancer. This section also had a total of five correct answers.

For Section IV which covered performance, actual technique was scored using a checklist. Each subject was asked to perform the BSE procedure using a silicone breast model. There were four areas of concern and a score of one point was given for each. They included using the correct part of the hand when examining the breast, areas examined, type of hand motion used, and nodule detection. Due to the time element, only one nodule approximately 2-3 cm in size was used. The position of the nodule was changed as much as possible to lessen the likelihood that communication between staff would lead those subsequently interviewed to expect to find the nodule in a specific region. Also, the rater provided no information between examinations about the participants' performance. They received no feedback to verify whether or not they had located the nodule correctly.

Since each section had a total score, knowledge and performance were correlated to frequency and to each other using the Pearson correlation coefficient and Spearman Rho

coefficient. The degree of correlation determined whether to accept or reject each hypothesis.

Summary

This chapter was concerned with the procedure used in collecting and analyzing the data to meet the purposes of this study. The setting and study population were discussed along with the development and pretesting of the research tool. The procedure for the collection of data was described. The statistical methods of frequency distribution, Spearman's Rho and Pearson's product correlation, to be used in the analysis of data were also discussed.

CHAPTER 4

ANALYSIS AND TREATMENT OF DATA

This chapter presents a description of the subjects based on demographic data obtained at the time of testing. This account is followed by a discussion of the findings of this study and a summary of these findings.

Description of Sample

The population consisted of 100 health care professionals. The subjects were selected from a large metropolitan hospital in Dallas County. The age group ranged from 21 to 56 years of age. Table 1 summarizes the age distribution for this group.

Table 1

Age Distribution

Age Groups	Percentage
18-34	60
35-44	30
45-54	7
55 and over	3

N = 100

Table 1 indicates that 60% of the population fell into the 18-34 age group, 30% into the 35-44 age group, 7% into the 45-54 age group, and 3% in the 55 and over group. Table 2 describes the marital status of the participants. The majority of the participants were married and comprised 54% of the total population. Single women accounted for 27%. The remainder of the group was composed of divorced women, 13%; widowed, 1%; and separated, 5%.

Table 2

Marital Status

Classifications	Percentage
Married	54
Single	27
Divorced	13
Widowed	1
Separated	5

N = 100

Table 3 provides data on the educational level of the participants. The minimal educational level was the completion of high school. This group consisted mostly of the licensed vocational nurses and respiratory therapists.

These two areas usually require no college background, only a 9 to 12 month training program at a hospital or trade school. This group accounted for 28% of the population. However, there were some vocational nurses and respiratory therapists who had attended college. Twenty-nine percent of the population had some college background with a maximum of 1-2 years. Approximately 35% had obtained college degrees from a 4-year school and 8% held master's degrees.

Table 3

Educational Level

Classifications	Percentage
High School	28
1-2 years college	29
Baccalaureate degree	35
Master's degree	8

N = 100

The breakdown by occupational titles is presented in Table 4. Thirty-nine percent were licensed vocational nurses, 7% were physical therapists, 8% were respiratory therapists, and 46% were registered nurses.

Table 4

Occupational Titles

Classifications	Percentage
Licensed Vocational Nurse	39
Physical Therapist	7
Respiratory Therapist	8
Registered Nurse	46

Data Influencing Knowledge and Health Practices

Participants were asked if a member of their family had ever had breast cancer. Of the total group, 14% replied in the affirmative, while 86% reported no family history of breast cancer. Due to the low incidence of familial cancer, this was not considered a significant factor in this study.

Breast biopsies had been performed on 20% of the population. None of the participants had had a breast removed due to cancer.

Only 13% of the group reported participating in a screening program for detection of breast cancer. A routine hospital visit was not considered to be part of a screening program unless a complete breast exam was implemented.

The next section of the questionnaire dealt with sources of information about breast cancer and the results are presented in Table 5. It was found that 41% of the participants had been taught how to do breast examinations by a physician. Only 11% had been taught by a nurse and 20% by a teacher. None of the subjects listed "parent" as a source of information. Nine percent stated no one; and 19% checked "other."

Table 5

Source of Information about Breast Cancer

Source	Percentage
Doctor	41
Nurse	11
Teacher	20
Parent	0
No one	9
Other	19

N = 100

Table 6 presents the data collected in the category of where did you learn breast self exams. Again 41% checked during a regular medical check-up. A total of 33% checked during a professional class, and 16% selected workshop. The

total responses are larger than the group itself since some subjects listed more than one source.

Table 6

Where Did You Learn Breast Self-examinations

Classifications	Percentage
During medical check-up	41
Professional class	33
Television	16
Workshop	16

Presentation and Analysis of Data

This last section presents frequency tables for Sections II, III, and IV of the questionnaire. Questions in the above sections were tabulated for number of correct responses. The prescoring criteria discussed in Chapter 3 were used to determine the mean of each group. The significance of the results were then assessed.

The first part of Section II was used to elicit information from participants concerning how often they have a breast exam by a physician. As shown in Table 7, a breast exam was done by a physician every year on 79% of the population, while only 15% stated they had an exam less than

once a year. The other 4% reported they had an exam every 6 months and 2% every 3 months. The 6% who had an exam two or three times a year emerged from the group who replied yes to having family members with breast cancer and those having had biopsies in the past.

Table 7

Frequency of Breast Exams Done by Physician

Frequency	Percentage
Every 3 months	2
Every 6 months	4
Every year	79
Less than once a year	15

N = 100

Frequency of breast exams done by the participants is presented in Table 8. Breast self-examinations were performed monthly by 50% of the total population. Twenty-eight percent stated they performed an exam every other month, 10% every six months, and 12% less often than every 6 months. Therefore, a total of 78% performed BSE on a regular basis.

Table 8

Frequency of Breast Exams Done by Subjects

Frequency	Percentage
Every month	50
Every other month	28
Every 6 months	10
Less than every 6 months	12

N = 100

For the first question on Section III that pertains to knowledge concerning breast exams, participants had to state what time of the month they examine their breasts in relation to their menstrual cycle. As shown in Table 9, the time of the month most frequently selected for breast examination was just after the cycle, which is the most appropriate time. The category of "other" consisted of no specific time and mid month. Also, 7% who fell into the 45 and over category checked no specific time for examining their breasts since they no longer had cycles because of menopause or due to previous hysterectomies. However, current literature suggested that a specific time should be set for examining breasts even though there is no longer a menstrual cycle.

Table 9

Time of Month to Perform Breast Examination

Time	Percentage
Before cycle	20
Halfway through cycle	15
After cycle	58
Other	7

N = 100

For the second question in Section III, participants had to list the steps involved in BSE. There was a total of five possible correct steps. The responses to question 2 are summarized in Tables 10 and 11.

The following results were obtained:

1. The breast should be inspected for any change in shape or appearance by standing in front of a mirror. Only 31% listed this step.

2. The breasts are palpated with the flat of the fingers. A total of 34% listed this step. Answers ranged from palm of hand to tip of fingers.

Table 10

Breast Examination Listed by Steps

Steps	Percentage Correct
1. In front of mirror to detect changes in size, symmetry	31
2. Lying flat with arm raised on side you're examining	78
3. Using flat of fingers to palpate	34
4. Using circular motion	76
5. Examining entire breast	68

N = 100

3. Circular motion with gentle pressure is recommended when examining the breast. A total of 76% listed this step correctly.

4. The breasts should be examined while lying flat with arm raised on side you are examining. Seventy-eight percent gave this response while a small percentage stated they had no specific position for examining their breasts.

5. The entire breast including the arm pits should be felt for a lump. Sixty-eight percent listed inner and outer

quadrant including the arm pits which was the correct answer. Some stated only fleshy part of breast or nipple.

Table 11 indicates that 2% did not list any steps correctly, 11% listed at least one step correctly, 19% listed only two steps, 37% listed 3 steps, and 21% listed four steps correctly. Only 9% of the population listed all five steps correctly.

Table 11

Number of Correct Steps Listed

Number	Percentage
0 steps	2
1 step	11
2 steps	19
3 steps	37
4 steps	21
5 steps	9

N = 100

Question 3 of Section III was designed to test the subjects' knowledge concerning the warning signs of breast cancer. The five major abnormalities are listed in Table 12.

Table 12

Number of Abnormal Breast Findings Identified

Type of Abnormality	Percentage Identified
1. Lump/mass	99
2. Nipple discharge	43
3. Symmetry or appearance change	11
4. Pain	9
5. Skin dimpling	13

N = 100

The most common symptoms known by the group were (a) lumps which were listed by 99% and (b) discharge, 43%. The least known ones were pain, symmetry, and skin dimpling.

The highest possible score for this question was 5 since there were five major abnormalities. The scores relative to the identification of abnormalities are shown in Table 13.

Table 13

Number of Warning Signs Identified by Group

Number of Signs	Percentage
0	1
1	47
2	16
3	20
4	15
5	0

N = 100

One percent failed to list any abnormalities. Forty-seven percent listed at least one, 16% listed two, 20% listed three, 15% listed four, and no one listed all five.

The last question dealt with appropriate technique of breast examination. Each participant had to perform the BSE technique using the model provided. The investigator checked to see if participants actually followed through on the items they had listed in describing the BSE procedure. A checklist was used to determine the number of correct listings. The correct techniques and percentage of the group identifying each are shown in Table 14. A breakdown

on the basis of the number of techniques properly demonstrated is shown in Table 15.

Table 14

Silicone Model Manipulation

Techniques	Percentage Correct
1. Areas examined	68
2. Type of hand motion	71
3. Part of hand used	64
4. Nodule detection	43

N = 100

The four areas of importance and the percentage of the group performing them properly are as follows:

1. Areas examined--68% examined the entire breast, not just the fatty tissue area.

2. Type of hand motion--71% performed the palpation using a circular motion which is correct.

3. Part of hand used--64% used the flat portion of their fingers while examining breasts.

4. Nodule detection--only 43% detected the nodule location correctly.

As stated previously, no feedback was given after each manipulation so no one knew if they had detected the nodule correctly. This was done to prevent outside discussion. Only 30% got all four areas correct and 5% failed to perform any correctly.

Table 15

Number of Correct Steps Performed in Model Manipulation

Number	Percentage
0	5
1	20
2	30
3	15
4	30

N = 100

Findings

The following null hypotheses were tested:

1. There will be no significant relationship between level of knowledge concerning breast self-examination and proper performance of breast examination. Rejected

2. There will be no significant relationship between knowledge of breast self-examination and frequency of performance. Rejected

3. There will be no significant relationship between performance and frequency of breast self-examination. Accepted

The total mean scores for knowledge, performance and frequency are shown in Table 16. Correlation coefficients between knowledge and performance were computed using the Pearson Product Moment Correlation. The Spearman Rho, a rank order test was used to calculate the coefficients between knowledge and frequency, and frequency and performance, as shown in Table 17.

Table 16

Results of Data Analysis Mean Scores

Category	Mean Score
Knowledge	5.485
Frequency	2.475
Performance	2.436

N = 100

Table 17

Variable Correlation

Variable	Correlation Level	p	Significant
Knowledge/ Performance	$r = .674$	$p < .001$	Yes
Knowledge/ Frequency	$r = -.368$	$p < .001$	Yes
Performance/ Frequency	$r = -.095$	$p < .172$	No

N = 100

The first null hypothesis of this study stated there would be no significant relationship between the level of knowledge concerning breast self-examination and proper performance of breast examination. The statistical analysis most specific to this hypothesis under investigation was the Pearson Product Moment Correlation. The degree of freedom for the correlation coefficient was equal to the number of subjects minus 2 (N-2). The calculated coefficient was $r = .674$; $P < .001$. Therefore, a positive correlation of .674 was found between knowledge and performance. As knowledge increases, so does performance. Since there was a strong relationship between knowledge and performance, the first null hypothesis was rejected at the .001 level.

The second null hypothesis formulated for this study stated there would be no significant relationship between knowledge of breast self-examination and frequency of performance. The Spearman Rho rank order test was employed since the frequency data was technically categorical in nature; in other words, nonparametric. A coefficient value of .368 using 98 degrees of freedom (dF) (N-2) was calculated. A correlation between knowledge and frequency was statistically significant at the .001 level. As knowledge increased, the frequency of breast self-exams increased. Therefore, the null hypothesis was rejected.

The third null hypothesis stated there would be no significant relationship between performance and frequency of breast self-examinations. Again the Spearman Rho was the coefficient of correlation formula used to analyze the relationship between frequency and performance.

The calculated coefficient was valued at -.095 and $p < .172$. There was essentially no correlation between performance and frequency of breast self-exams. A nonsignificant relationship existed, therefore, the hypothesis was accepted.

Summary

This chapter was concerned with the analysis and treatment of data obtained from this study. The population was described according to the demographic data collected. Only one study group was involved, the health care professional.

It was determined that there was a significant relationship between the level of knowledge and proper performance of breast self-examination. It was further determined that there was a significant relationship between frequency of breast self-examination and knowledge of breast self-exams. There was no significant relationship, however, between frequency of BSE practice and correct performance of breast examination.

Frequency distributions were used to assess the number of correct responses on all questions. The Pearson Product Moment Correlation and Spearman Rank Order were used to determine if a significant relationship existed between the variables and thereby the hypotheses were accepted or rejected.

CHAPTER 5

SUMMARY OF THE STUDY

A descriptive correlational study was conducted to determine the level of knowledge and practices of health care professionals concerning breast self-examinations. A summary of the findings derived from this study are discussed. Implications, conclusions, and recommendations are also offered.

Summary

This study was conducted to determine if there was a significant relationship between level of knowledge, frequency of practice, and correct performance of breast self-examinations among health care professionals. All subjects who agreed to participate were given a four-part questionnaire developed from current literature on breast self-examinations. The areas included on the questionnaire were as follows: Section I, demographic data; Section II, data relating to the frequency of practice of BSE; Section III, knowledge of breast self-exam technique; and Section IV, actual performance of the BSE technique using a silicone breast model.

Permission to conduct the study was obtained from the institution involved. All subjects were selected by convenience sampling. Criteria established for the population stipulated that the individual be female, 18 years of age or older, able to read English, and a practicing health care professional. Anonymity was assured each participant.

Frequency distribution tables were used to tabulate responses on each item. Two descriptive statistical tests were used to analyze the data and correlate variables. The tests used were the Pearson Product Moment Correlation which is a parametric statistical test and a nonparametric test, the Spearman Rho Rank order test.

Discussion of Findings

Findings of this study indicated that there was a significant correlation between knowledge of breast exams and proper performance of the breast self-exam technique. Health care professionals, due to education and clinical background, are usually abreast of current literature and information regarding health issues. A total of 58% knew the appropriate time for breast examinations, which is 1-7 days after the menstrual cycle. This fact is important

since the effect of hormonal changes within the breast can lead to frequent misdiagnosis.

The percentage of participants able to list the major warning signs of breast cancer was not as encouraging. Forty-seven percent listed at least one abnormality, but no one listed all five. The lump or mass was the most frequent symptom listed, probably because of the emphasis placed on it by physicians, certain literature, and the media. Very little information is furnished regarding the other symptoms of pain, symmetry or contour change, and skin dimpling. Although the cancer is usually more advanced when these symptoms appear, they should be mentioned periodically.

A significant relationship was also shown to exist between frequency of breast exams and knowledge. As knowledge increased, the frequency of breast exams increased. This significance may be due to health care professionals emphasis on health maintenance and detection of disease conditions through regular health check-ups. These professionals know what is expected of them as role models regardless of whether or not they actually follow through with their practices. As stated, 79% of the participants had yearly physicals and 78% performed breast self-exams every month or every other month. Educational

background due to occupation also increased their awareness of different health problems.

There was no significant relationship between performance and frequency of breast self-examination. How frequently one performs breast examinations does not appear to relate to how well they perform the technique of breast self-exams. Previous data indicated that 78% of the subjects practice BSE either every month or every other month, but only 41% were able to detect nodules on the breast model. Although the model was different from the human breast in shape, consistency, and tissue characteristics, it nevertheless provided a standard against which BSE performance could be judged. The characteristics which seem to influence nodule detection were areas examined and part of hand used. This study underlined the need to evaluate further the skill with which women perform breast self-examinations.

Conclusions

Due to the type of research conducted, nonexperimental, generalizations to individuals other than the subjects in this study cannot be made. Four conclusions were derived from this study:

1. Increased knowledge does influence the proper performance of breast self-exams.

2. As knowledge increases, so does frequency of breast exams.

3. Frequency of breast exams, however, does not insure proper performance.

4. The need for proper technique of breast self-exams should continue to be stressed.

Implications

Health care professionals can be more effective in their role if they adhere to the same expectations as they have of others in relation to health practices. However, 79% do have yearly breast exams by a physician, and 50% do monthly breast exams themselves with another 28% performing breast exams every other month. A considerable number (43%) do not perform BSE at the correct time of the month in relation to their menstrual cycle. However, many are knowledgeable about the actual procedure of breast self-exams and the steps involved. These should be reviewed periodically for the individual's own awareness. Actual performance technique does need some improvement. Practicing BSE frequently, but incorrectly, is futile. One

could only question the effectiveness of their teaching to the public.

The reported BSE technique lacking in completeness suggested that further study of health care professionals' education in the practice of BSE is warranted. If BSE is to accomplish its objective, health educators must take appropriate measures to assure that these professionals, a primary source of patient education, have adequate knowledge about and opportunity to practice BSE. Further intensive education of health care professionals is needed to insure that their own practice of breast self-exams is effective, thus insuring effective teaching of BSE technique to the public. Breast self-examination holds great potential as an inexpensive, safe, and readily accessible screening device. It must be taught and practiced effectively to realize its potential.

Recommendations

Based on the findings of this study, the following recommendations have been made:

1. A similar study be conducted using a larger population to determine if there is a difference in the results.

2. Studies be conducted to determine whether there are

differences in the knowledge, frequency, and level of performance of breast self-exams among health care professionals in education, administration, and clinical practice.

3. Conduct a study of health care professionals in a community setting to determine the percentage who are teaching BSE and their effectiveness in self-practice.

4. A study to examine whether health care professionals' own BSE practice increases their tendency to teach BSE to their patients or clients.

References

American Cancer Society. (1984). A cancer source book for nurses. New York: Author.

American Cancer Society. (1985). Cancer facts and figures. New York: Author.

Bayley, J., Cockran, N., Fatin, W., & Wilson, M. (1980). The effectiveness of registered nurses in breast self-examination. Australian Journal of Nurses, 9(9), 42-44.

Becker, M. H. (1974). The health belief model and personal health behavior. Health Education Monographs, 2, 326-473.

Bennett, S., Lawrence, R., Fleishman, K., Gifford, C., & Slack W. (1983). Practicing breast self-examination. Journal of American Medical Association. 249, 488-491.

Ben-Sira, Z. (1977). Involvement with a disease and health promoting behavior. Social Science Medicine, 11, 165-173.

Brooks, P. (1982). Epidemiology and risk factors in breast cancer. Journal of Reproductive Medicine, 27, 670-705.

Cole, C. F., & Gorman, L. (1984). Breast self-examination: Practices and attitudes of registered nurses. Nursing Forum, ii, 37-41.

Feldman, J., Carter, A., Nicastri, A., & Hosat, S. (1981). Breast self-examination relationship to stage of breast cancer at diagnosis. Cancer, 47(11), 2740-2745.

Fink, R., Shapiro, S., & Roester, R. (1972). Impact of efforts to increase participation in repetitive screening for early breast cancer detection. American Journal of Public Health, 62(3), 328-336.

Foster, R. S., Lange, S., Costango, M., Worden, J., Haines, E., & Yates, J. (1978). Breast self-examination practices and breast cancer stage. New England Journal of Medicine, 299(6), 265-270.

Gallup Organization Inc. for American Cancer Society. (1974). Women's attitudes regarding breast cancer. Occupational Health Nurse, 22, 20-23.

Gray, L. (1981). The role of breast self-examination in the detection of breast cancer. Diseases of the Breast, 7(2), 6-8.

Greenwald, P., Nasca, P., Lawrence, C., Horton, J., McGowan, P, Gabriel, T., & Carlton, K. (1978). Estimated effect of breast self-examination on breast cancer mortality. New England Journal of Medicine. 299(6), 271-273.

Haagensen, C. D., Bodian, C., & Haagensen, D. E., Jr. (1981). Breast cancer: Risk and detection. Philadelphia: W. B. Saunders.

Hallal, J. C. (1982). The relationship of health belief, locus of control, and self-concept to the practice of breast self-examination in adult women. Nursing Research, 31, 137-142.

Harwood, D. (1983). Breast self-examinations. Nursing Times, 79(9), 27-29.

Haughey, B., Marshall, G., Mettlin, C., Nemoto, T., Kroldart, K. & Swanson, M. (1984). Nurse's ability to detect nodules in silicone breast models. Oncology Nursing Forum, 11(1), 37-42.

Helmich, S., Mopero, S., Rosenberg, L., Kaufman, D., Slove, D., Blair, C., Monittien, O., Tally, D., Kropp, C., Leavitt, T., Shatterfeld, D., Engle, R., & Levy, M. (1983). Risk factors for breast cancer. American Journal of Epidemiology, 117, 35-45.

Herold, E. S., Goodwin, P., & Lero, G. (1979). Self-esteem, locus of control, and adolescent contraception. Journal of Psychology, 101, 83-88.

Hill, D., & Todd, P. (1976). A psychologist's investigation of women's response to the threat of breast cancer and self-detection procedures. Cancer Society, 44, 280-285.

Hochbaum, G. M. (1970). Health behavior. Belmont, CA: Wadsworth Publishing.

Howe, H. L. (1980). Proficiency in performing breast self-examinations. Patient Counseling and Health Education, 2(4), 151-153.

Huguley, C. M., & Brown, R. L. (1981). The value of breast self-examination. Cancer, 47(5), 989-995.

Kasl, S., & Cobb, S. (1966). Health behavior, illness behavior, and sick role behavior. Archives of Environmental Health, 12, 246-264.

Keller, K., George, E., & Podell, R. (1980). Clinical breast examination and breast self-examination in a family practice population. The Journal of Family Practice, 11(6), 887-893.

Leis, H. P. (1980). Risk factors for breast cancer: An update. Diseases of the Breast, 6(4), 21-27.

Lynch, J. (1978). Mobile cancer screening: Epidemiology and cancer control model. Prevention and Detection of Cancer Part II. H. E. Nieburg Ed. New York: Marcel Dekker.

Magarey, J. C. (1978). Breast cancer. Patient Management, 2(5), 37-42.

Molbo, D. (1983). People. American Journal of Nursing, 83(10), 1488.

National Institutes of Health. (1980). National survey of breast cancer. (NIH Publication No. 81-2306). Bethesda, MD.

Nelson, A. (1975). The relationship between knowledge of breast cancer and personal health practices. Unpublished master's thesis, Texas Woman's University, Denton, TX.

Polit, D., & Hungler, B. (1983). Nursing research: Principles and methods (2nd ed.). Philadelphia: J. B. Lippincott.

Rose, R. J. (1978). Surveys reveal women's attitudes to breast self-examinations. New Zealand Nursing Journal, 4(10), 24-26.

Rosenstock, I. M. (1966). Why people use health services. Milbank Memorial Fund, 44(3), 94-126.

Salisburg, K. (1983). The cancer handbook (1st ed.). New York: Wideview Books.

Schlueter, L. (1982). Knowledge and beliefs about breast cancer and breast self-examination among athletic and nonathletic women. Nursing Research, 31(6), 348-353.

Scott, D. W. (1983). Quality of life after breast cancer diagnosis. Topics in Clinical Nursing, 4(4), 20-37.

Stillman, M. G. (1977). Women's health beliefs about breast cancer and breast self-examination. Nursing Research, 26(2), 121-126.

Strax, P. (1980). Strategy for detection of early breast cancer. Cancer, 46(4), 926-929.

Townsend, C. M. (1980). Breast lumps. CIBA Clinical Symposia, 32(2), 3-32.

Trichoilous, D., MacMahon, B., & Cole, P. (1982). Menopause and breast risks. Journal of National Cancer Institute, 48, 605-613.

Trotta, P. (1980). Breast self-examination: Factors influencing compliance. Oncology Nursing Forum, 7(3), 13-17.

Turnbull, E. M. (1978). Prevention, breast examination practices. American Journal of Nursing, 77(9), 1450-1451.

APPENDICES

APPENDIX A

AGENCY APPROVAL FORM

Texas Woman's University
College Of HEED

Agency Permission For Conducting Study *

The Veterans Administration Medical Center

Grants to Billie Ramsire, R.N.

a student enrolled in a program of health education leading to a Master's Degree at Texas Woman's University, the privilege of it's facilities in order to study the following problem.

Breast Self Examination:Knowledge and Practices of Health Care Professionals.

The conditions mutually agreed upon are as follows:

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

Date : 7/15/86

John M Fewel AO/L+D
Signature of Agency Personnel

Billie Ramsire
Signature of Student

Nora Shultz
Signature of Faculty Advisor

APPENDIX B

GRADUATE SCHOOL APPROVAL FORM

TWU Texas Woman's University
P.O. Box 22479, Denton, Texas 76204 (817) 898-3400, Metro 434-1757, Tex-An 341-3400
THE GRADUATE SCHOOL

September 22, 1986

Ms. Billie Ramsire
6060 Village Bend Dr.
Dallas, TX 75206

Dear Ms. Ramsire:

Thank you for providing the materials necessary for the final approval of your prospectus in the Graduate Office. I am pleased to approve the prospectus, and I look forward to seeing the results of your study.

If I can be of further assistance, please let me know.

Sincerely,

Leslie M. Thompson

Leslie M. Thompson
Provost

ay

cc: Dr. Roger Shipley
Dr. Ann Uhlir

APPENDIX C

BREAST SELF-EXAMINATION QUESTIONNAIRE

QUESTIONNAIRE

I. Please respond to the following statements by placing the requested information in the blank spaces.

1. Age _____

2. Marital Status _____

3. Highest level completed in school _____

4. Check one:

   a. LVN _____

   b. PT _____

   c. RT _____

   d. RN _____

   e. Other _____

5. Has anyone in your family had breast cancer?

   _____ yes

   _____ no

6. Have you had a breast biopsy?

   _____ yes

   _____ no

7. Have you had a breast removed due to cancer?

   _____ yes

   _____ no

8. Who taught you to do breast self-examination?

_____ doctor

_____ nurse

_____ teacher

_____ parent

_____ no one

_____ other, please specify _____

9. Where did you learn breast self-examination?

_____ T.V.

_____ during a regular medical check-up

_____ during a professional class as undergraduate

_____ at a workshop

II. Place a check in the blank which most closely corresponds to your response.

10. Have you participated in a screening program for detection of cancer within the last year?

_____ yes

_____ no

11. How often do you have breast examination by a physician?

_____ every 3 months

_____ every 6 months

_____ every year

_____ less often than once a year

12. How often do you perform breast self-examination?

_____ every month

_____ every other month

_____ every 6 months

_____ less often than every 6 months

III. Please write in the answers to the following questions. Use back of page, if necessary.

1. In relation to your menstrual cycle, at what time of the month do you examine your breasts?

2. Please describe the procedure you use for examining your breasts including position of hands, body positionings, etc.

3. What would you consider to be abnormal findings when doing breast examination?

IV. Demonstrate the breast self-examination technique using the model provided.