

BREAST SELF-EXAMINATION PRACTICE
IN OLDER WOMEN

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DEDICATION

This dissertation is dedicated to my husband, Marvin. He has supported me every step of the way and guided me through the maze of computer language.

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BREAST SELF-EXAMINATION PRACTICE IN OLDER WOMEN

ABSTRACT

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The problem of this study was to determine what variables are predictive of breast self-examination in a population of older women. This study tested the health protecting behavior of breast self-examination using the scales of the Champion (1985) instrument and the researcher-developed Williams Breast Inventory. These instruments were based on the Health Belief Model. Selected variables of the Health Belief Model and the dependent variable of frequency of breast self-examination formed the conceptual framework of this investigation.

The sample consisted of 253 women between the ages of 62 to 93. Subjects completed the instruments used to test the seven research hypotheses, and to describe the sample. Five research hypotheses reflected the five constructs of the Champion questionnaire. Two research hypotheses reflected knowledge and health history derived from the Williams Breast Inventory.

Reliability indices were computed for the Champion scales using Cronbach's alpha. All scales reached the reliability coefficient of .60. Factor analysis yielded strong evidence for construct validity of the scales.

Multiple regression analysis tested each of the research hypothesis. Analysis of the data supported the Health Belief Model, as four of the five variables were significant in accounting for variances in the frequency of BSE. Health motivation accounted for 18% of the variance, with perceived barriers accounting for 8%. Susceptibility and benefits were also significant predictors of BSE practice. No significant relationship was found on frequency of BSE and Perceived Seriousness. Knowledge and Health History were related to BSE. Higher knowledge scores were related to more frequent practice. The health history variables predictive of BSE practice were: (a) examination by physician, (b) instruction by nurse, and (c) no history of skin cancer.

Implications of the investigation suggested a prescriptive framework from which nurses can organize and integrate cancer prevention strategies specific to the needs of older women. Nurse teaching BSE made a significant difference in practice rates; therefore, nurses need to be prepared to promote this health protecting behavior throughout the life span.

TABLE OF CONTENTS

DEDICATION	iv
ACKNOWLEDGMENTS	v
ABSTRACT	viii
LIST OF TABLES	xii
LIST OF FIGURES	xiii

Chapter

I. INTRODUCTION	1
Problem of the Study	4
Purpose of the Study	4
Justification	4
Conceptual Framework	7
Assumptions	10
Research Hypotheses	12
Definition of Terms	13
Limitations	14
Delimitations	15
Summary	15
II. REVIEW OF LITERATURE	16
Breast Cancer	16
Breast Self-Examination	20
Health Beliefs	26
Older Women	30
Summary	35
III. PROCEDURE FOR COLLECTION AND TREATMENT OF DATA	36
Research Design	36
Setting	36
Population and Sample	37
Protection of Human Subjects	37
Instruments	39

Data Collection	44
Treatment of Data	48
IV. ANALYSIS OF DATA	51
Description of Sample	52
Findings	62
Additional Findings	66
Summary of Findings	70
V. SUMMARY OF THE STUDY	72
Summary	73
Discussion of Findings	75
Conclusions and Implications	80
Recommendations for Further Study	82
REFERENCES	84
APPENDICES	
A. Human Subjects Exemption Form	95
B. Agency Permissions	98
C. Graduate School Permission	103
D. Follow-Up Post Card	105
E. Cover Letter	107
F. Champion Questionnaire and Permission to Use Instrument	109
G. Demographic Data Sheet	113
H. Williams Breast Inventory	115
I. Permission to Reprint Health Belief Model (Figure 1)	118

LIST OF TABLES

1. Frequency and Percentage of the Educational Level of the Subjects	53
2. Frequency and Percentage of Practice Rate of Breast Self-Examination	54
3. Summary of Factor Extraction Results	56
4. Factors, Variables, and Corresponding Weights as Computed in the Factor Matrix	57
5. Stepwise Multiple Regression of Champion Scales by Frequency of Breast Self-Examination	60
6. Reliability Analysis for Champion Scales	61
7. Stepwise Multiple Regression of Health History Variables by Frequency of Breast Self-Examination	67

LIST OF FIGURES

1. Health belief model 9
2. Diagram of health belief model concepts and
their relationship to frequency of breast
self-examination 11

CHAPTER I

INTRODUCTION

Cancer is the second leading cause of death in the United States. In 1986, 472,000 people will die of the disease. This same year, 930,000 people will be diagnosed as having cancer. Cancer of the breast is the most common form of malignancy among American women (Young & Pollack, 1982). The American Cancer Society estimates that there will be 123,000 new cases of breast cancer in the United States in 1986. In this same year breast cancer will be responsible for the deaths of 39,900 women and 300 men (American Cancer Society, 1986). It is not surprising that breast cancer is the most feared cancer affecting women today (Boatman, 1985).

Increasing numbers of Americans are learning to combat cancer through disease prevention and health promotion. The importance of health protection and self-care practice begins at birth and continues throughout the life span. This practice can take many forms, but one that is important for every woman is the early detection method of breast self-examination (BSE). There are increasing numbers of women practicing BSE

monthly as recommended by the American Cancer Society and the National Cancer Institute.

Despite widespread public education, there is a negative correlation between age and BSE practice (Foster, Costanza, Worden, Haines, & Yates, 1978). The performance of breast self-examination declines as a woman ages. This is even more serious when one considers that the incidence of breast cancer increases with age. In fact, in Western countries the incidence rate increases around age 30 and progresses to very high rates by age 70 (Waterhouse, Muir, & Correa 1976).

Presently, about 1 out of 11 American women will develop breast cancer in the course of her lifetime. The major risk factors in the development of breast cancer are as follows: age 50 or above, personal or family history of breast cancer, never bore children, or delivered first child after age 30 (American Cancer Society, 1986).

Much attention has been given to breast cancer and breast self-examination in premenopausal women while ignoring the knowledge that breast cancer continues to be a threat to women aged 65 and older (Seidman, 1977). Additionally, women in this age group comprise the fastest growing segment of the general population and the

increasing majority among the aged (Social Security Administration, 1983).

What are factors influencing the practice of breast self-examination in older women? Although known to be a simple, life saving procedure, it is also known that less than 25% of women actually practice breast self-examination (Bennett, Lawrence, Fleischmann, Gifford & Slack, 1983). A woman's attitudes regarding breast cancer and the practice of breast self-examination are influenced by a number of factors. In today's society, the breast holds values related to fertility, womanhood, and sexuality. A woman may have been taught as a child not to touch her breasts or to explore her body. She may also believe women of her ethnic background are not susceptible to breast cancer (Wabrek & Wabrek, 1979).

The reasons for not practicing BSE are numerous, but often relate to a woman's health beliefs and knowledge about breast cancer and breast self-examination (Champion, 1984; Massey, 1986; Stillman, 1977). Identifying the reasons why women are not practicing this health protecting behavior is the first step toward change. As women receive information about breast cancer and breast self-examination, they may be more likely to practice this health promotion activity.

The present study explored the area of older women's practice of breast self-examination. Areas investigated included older women's beliefs regarding self-care and knowledge of breast cancer and breast self-examination. The intention of the investigator was to contribute to the profession of nursing in its efforts to assist all women in protecting themselves throughout the life span.

Problem of the Study

The problem investigated was: What variables are predictive of breast self-examination practice in a population of older women?

Purpose of the Study

The purpose for the investigation was to determine perceived barriers and incentives to breast self-examination practice in a population of older women?

Justification

One of the goals of nursing is to increase health conducive behaviors. Health promotion in American society has become a goal of the health care system (United States Public Health Service, 1980). The urgent need to promote and maintain health has come to the public's attention due to spiraling medical care costs. The rapid escalation in health care costs and the slow progress in treatment for

malignancies have led to the public's increased interest in prevention. Economic rewards have traditionally been geared to disease treatment; however, the general restructuring of the health care system has begun to create situations where economic rewards are also available for clinical prevention activities. Presently, there are little data to indicate with certainty that prevention is less costly than the treatment of patients with breast cancer.

For more effective health promotion activities, more knowledge of health behaviors related to health status is necessary. To prevent disease and its complications, preventive behaviors for early detection should be undertaken, especially in older persons. The underlying philosophy of breast self-examination is to detect early disease so that treatment can be initiated when it is most efficacious (Newell, 1985). The basis for early detection is, in part, related to the clinical observation that 90% of breast cancers are detected by the women themselves (Strax & Greenwald, 1979).

Theories of motivation regarding attitudes and health practices about cancer prevention are yet untested (Pender, 1982). Application of theories to health practice and analysis of outcomes require systematic

observation and analysis. Careful consideration to the goals of nursing practice can facilitate practical clinical research and the promotion of self-care, such as breast self-examination among women.

Stromborg (1986) reports that research to ascertain factors influencing decisions made by older persons related to cancer is a priority of the National Institute of Health. She concluded that there is an urgent need to focus on nursing actions which are effective in increasing elderly persons' participation in cancer screening programs.

A well-defined cancer prevention program with a sound theoretical basis, designed and tested, will provide the needed framework advancing the practice of breast self-examination. Knowledge of specific preventive behaviors and attitudes associated with health practice need to be identified to establish a program specific to older women. Housing projects where elderly women reside provide an excellent setting for background information. A prescriptive framework from which nurses can begin to organize and integrate cancer prevention strategies can be developed.

" It is important amidst increasing incidence of breast cancer that women are provided access to health care

knowledge and education in skills of breast self-examination. Prior to the development of cancer prevention strategies, the specific variables impacting older women's breast self-examination practices should be identified. Additionally, this investigation will contribute to the current efforts of the American Cancer Society and other cancer related organizations in their efforts regarding breast cancer. This study will also assist in achievement of the American Nurses' Association (ANA) Council of Community Health Nurses goal which states, "Community Health Nursing is a synthesis of nursing practice and public health practice applied to promoting and preserving the health of populations" (ANA, 1986, p. 17).

Conceptual Framework

Integral to the practice of nursing is theory which attempts to explain the attitudinal components of an individual's health behavior. This theory contributes to knowledge as to why people do and do not take actions to prevent, detect, or treat diseases. The Health Belief Model (HBM) is a psychosocial formulation developed to explain health-related behavior at the level of individual decision-making (Becker, Haefner, & Kasl, 1977).

Becker's model is based on work by Hochbaum, Kegels, Leventhal, and Rosenstock. The Health Belief Model as modified by Becker is presented in Figure 1. This model served as the conceptual model for this study. The components of the model are divided into three areas; individual perceptions, modifying factors, and action-taking variables.

The individual perceptions include perceived susceptibility and perceived seriousness of a given health problem. According to Becker et al. (1977), perceived susceptibility and perceived seriousness combine to determine the total perceived threat of an illness to a specific individual.

The modifying factors include the following: demographic variables, sociopsychological variables, structural variables, and cues to action. Age, sex, and race comprise the demographic variables. Sociopsychologic variables relate to an individual's personality and social status. Knowledge of or personal experience with disease indicate the structural variables. The cues to action proposed in the model affect the incidence of health behavior by triggering appropriate overt actions. Cues can either be internal or external (Becker et al., 1977). An internal cue, for example, might be previous history of

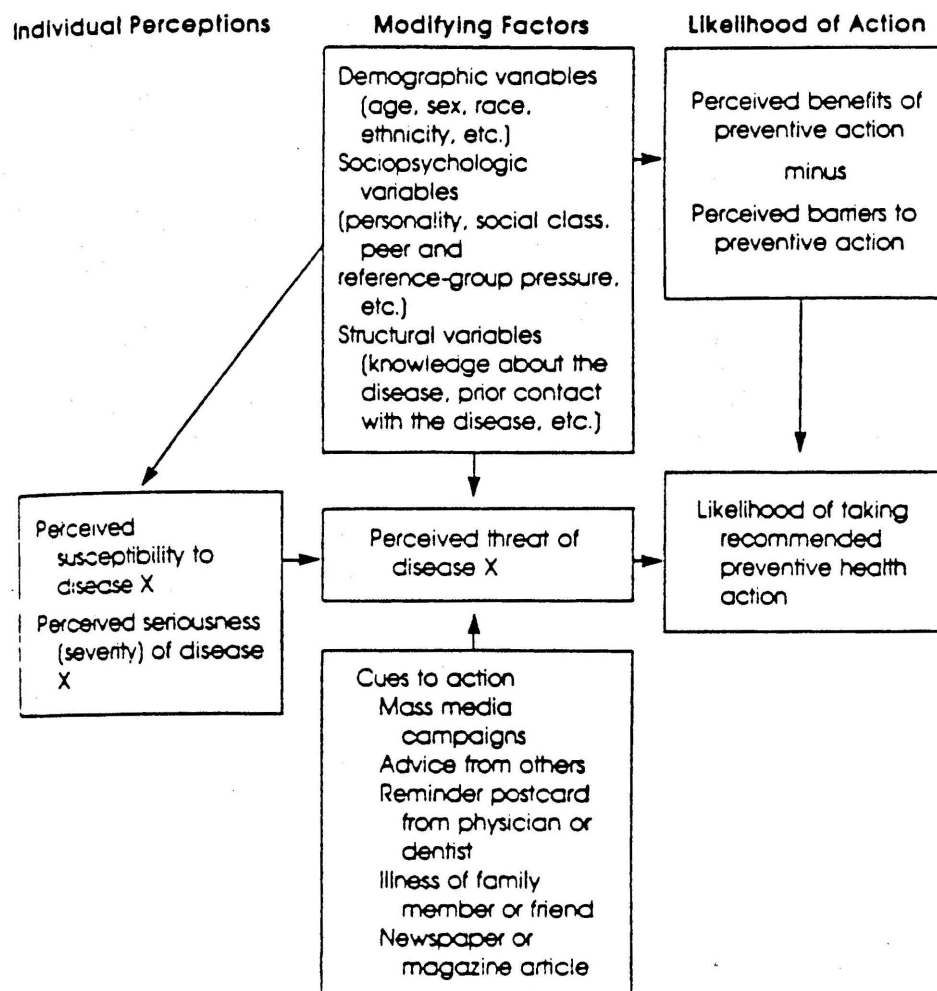


Figure 1. Health belief model (Becker et al., 1977).
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the disease or symptoms of current disease. External cues come from the environment, such as viewing media materials or attending a class about cancer.

The action-taking variables affecting the likelihood of an individual taking recommended preventive health action are perceived benefits and perceived barriers. Beliefs about the effectiveness of a recommended preventive action appear to influence health-protecting behavior. Perceived barriers to preventive care take many forms. They may be related to financial concerns of a particular treatment or the fear of pain.

Selected variables of the Health Belief Model and the dependent variable of frequency of breast self-examination formed the conceptual framework of this investigation. The components of the model and its use in this specific population are represented schematically in Figure 2.

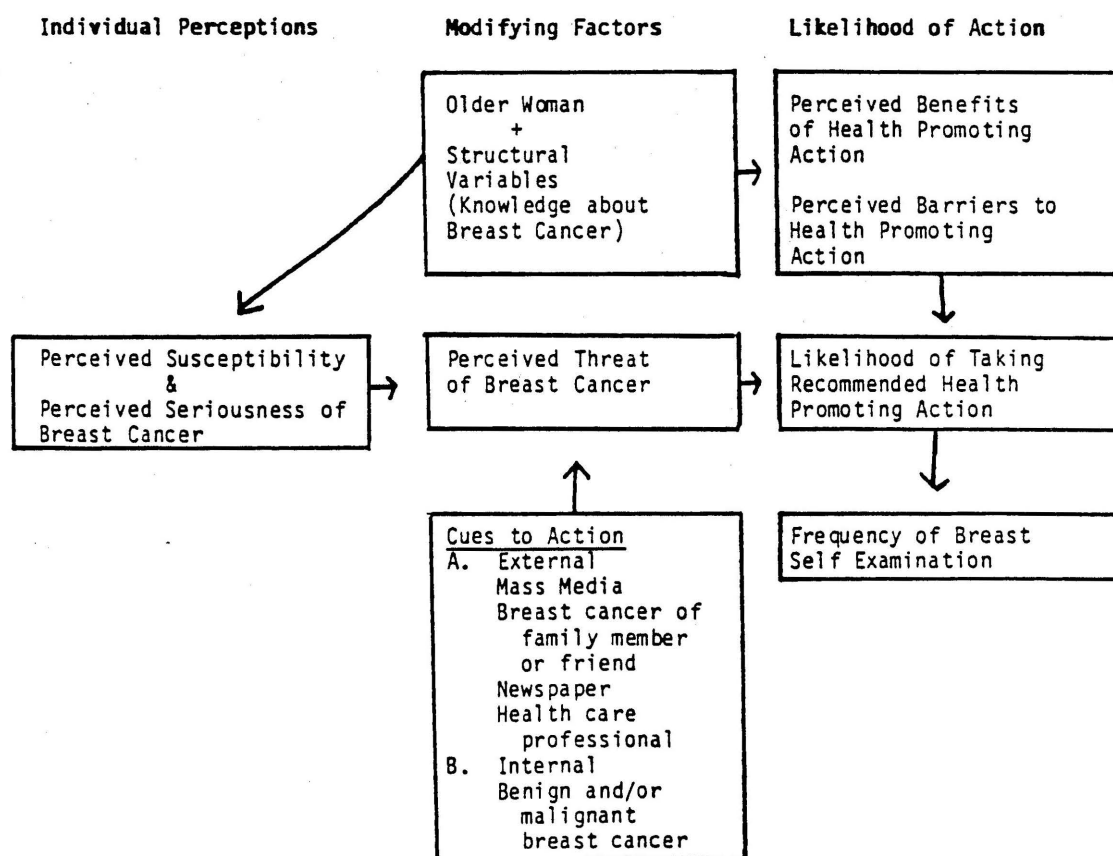
Assumptions

For the purposes of this study, the following assumptions were made:

1. The practice of breast self-examination is a health promotion activity.
2. Reports of breast self-examination are valid indicators of actual breast self-examination practice.

Figure 2

Diagram of Health Belief Model Concepts
and Their Relationship to Frequency
of Breast Self-Examination



DESCRIPTION: The diagram illustrates the concepts of the health belief model and their relationship to the practice of breast self examination. This model predicts that a woman will practice breast self examination when she receives certain cues from the environment, perceives a threat (susceptibility and seriousness), and sees the benefits minus the barriers to this action. The woman has an increase in health motivation which results in positive health activities, i.e. frequency of breast self examination.

Research Hypotheses

Seven research hypotheses were tested. Five research hypotheses reflected the five constructs of the Champion Questionnaire. Two research hypotheses reflected knowledge and health history derived from the Williams Breast Inventory. The research hypotheses for this investigation were:

1. There is a relationship between Perceived Susceptibility and frequency of Breast self-examination in a population of older women.
2. There is a relationship between Perceived Seriousness and frequency of breast self-examination in a population of older women.
3. There is a relationship between Perceived Benefits and frequency of breast self-examination in a population of older women.
4. There is a relationship between Perceived Barriers and frequency of breast self-examination in a population of older women.
5. There is a relationship between Health Motivation and frequency of breast self-examination in a population of older women.

6. There is a relationship between knowledge of breast cancer and frequency of breast self-examination in a population of older women.

7. There is a relationship between health history and frequency of breast self-examination in a population of older women.

Definitions of Terms

The terms to be defined included the dependent variable of frequency of breast self-examination and the independent variables of perceived susceptibility, perceived seriousness, perceived benefits, perceived barriers, health motivation, knowledge, and health history. For purposes of this investigation the following definitions were employed:

1. Older women--women 62 years and older living in senior citizens' housing.
2. Perceived susceptibility--the individual's belief that she is at risk of developing breast cancer.
3. Perceived seriousness--degree of threat related to having breast cancer.
4. Perceived benefits--beliefs regarding the value of breast self-examination in preventing, detecting, or minimizing the consequences of cancer.

4. Perceived barriers--factors which inhibit the individual from practicing breast self-examination.
6. Health motivation--individual's perceived concern about general health (Champion, 1984).
7. Breast self-examination (BSE)--the individual's practice of self-inspection and self-palpation of breast tissue.
8. Knowledge--information gained through previous education or experience.
9. Health history--women's self-report of previous experiences with breast disease.

Limitations

This study was limited in scope to the settings from which the sample was obtained. As a nonprobability sample, the research findings are not generalizable to the population. This offers a limitation of external validity of the study (Issac & Michael, 1982). A conceptual limitation involved the acceptance of reported breast self-examination practice as an indicator of actual breast self-examination performance.

Delimitations

This study was limited to older women residing in urban senior housing centers in a southwestern city of the United States.

Summary

Because of the near epidemic proportions of breast cancer and the catastrophic consequences of the disease, all women need to be informed about early detection of cancer through breast self-examination. Previous researchers have studied health beliefs and their relationship to a woman's practice of breast self-examination. However, the literature is meager regarding health beliefs and breast self-examination practice in older women. Through this investigation factors concerning the older woman's health beliefs and knowledge about breast cancer and breast self-examination were explored. The Champion Questionnaire and the Williams Breast Inventory were used to assess these variables. The instruments were based upon the conceptual framework of the Health Belief Model. The study was timely amidst increased incidence of breast cancer in an ever-growing population of older women.

CHAPTER II

REVIEW OF LITERATURE

A review of the literature was conducted to provide a theoretical and empirical foundation for the projected investigation. The review is organized into the four major concepts essential to the present investigation. These are: breast cancer, breast self-examination, health beliefs, and older women.

Breast Cancer

The review of literature regarding breast cancer includes literature focused on pathology, incidence, etiology, and nursing implications. Breast cancer is any type of malignant growth arising in the tissues of the breast. Almost all breast cancer arises in the epithelial tissues which are the tissues that line the breasts' milk-producing structures. The epithelial carcinomas account for nearly 90% of all breast cancer (Fisher & Carbone, 1982).

Previous research has supported size of tumor as a primary factor in predicting extent of disease. Generally, the larger a breast cancer, the greater the chances that metastasis has occurred. Lymph node metastasis is also related to poor prognosis (Fisher,

Redmond, & Fisher, 1980). Current literature has challenged original theory that the spread of breast cancer is by direct extension. Hellman, Harris, Canellos, and Fisher (1982) argued that breast cancer is a systemic disease, and metastases may occur early in the disease without lymph node involvement.

Recent research has focused on the site of cancer within the breast. Young, Percy, and Asire (1981) collected data on 25,484 women experiencing breast cancer. Of those, 10,504 (41%) women had tumors occurring in the upper outer quadrant. Similar results were reported by Wilkinson (1980) who documented 51% of breast cancers having developed in the upper outer quadrant. The second most common site of breast cancer was the area surrounding the nipple which accounted for 18% of the cancers.

There is a variety of related genetic, physiologic, and environmental factors cited in the etiology of breast cancer. However, no single factor or combination of factors currently known can explain the etiology of the disease (Young et al., 1981). The incidence of breast cancer has been edging slowly upward. The high rates of breast cancer that prevail in the United States--85.6 per 100,000 for white women and 72.0 for for black women--are

also found in other western and industrialized countries including Canada, western Europe, Australia, New Zealand, and South Africa. The lowest rates, 10 to 15 per 100,000, are found in African and Asian populations (Bjarnason, Day, & Snaedal, 1974). Intermediate rates are reported in eastern and southern Europe (Young et al., 1981).

Generally, in all types of cancer, increased incidence of disease is associated with increased age. Breast cancer is no exception. The disease is extremely rare in the premenarchal period. The risk of developing breast cancer increases with age, such that two-thirds of all breast cancers occur in women age 50 or older (Leis, 1977). In western countries, the incidence rises rapidly from age 30 to menopause; after age 50 incidence continues to increase more slowly, to and beyond age 80. A plateau in the incidence curve around ages 45-55 marks the division into premenopausal and postmenopausal phases (Young et al., 1981).

Numerous studies describe risk factors that may predict the development of breast cancer. The major risk factors cited are gender, age, a personal history of breast disease, and a family history of breast cancer (Leis, 1980). Additional studies have shown a higher incidence of breast cancer among obese women. This

finding was observed more frequently in postmenopausal women who were overweight (DeWaard, Poortman, & Colette, 1981; Kelsey, Fischer, & Holford, 1981; Paffenberger, Kampert, & Chang, 1980). On the contrary, Miller, Kelly, and Choi (1978) associated premenopausal breast cancer with women who were thinner. Numerous researchers have studied the association between diet (Wynder & Rose, 1984), alcohol (Webster, Wingo, Layde, & Ory, 1983), and smoking (Schechter, 1985) and the risk of breast cancer. Strax (1982) gives the following warning:

All women need to be considered at risk; about 80 percent of the women we screen don't have known risk factors, but they are no less likely to develop breast cancer. The real risk is being a woman and getting older. (p. 30)

Breast cancer then is an important health concern for all women. In 1986, an estimated 123,000 American women will be told for the first time that they have breast cancer. More precisely, 1 woman out of 11 will develop breast cancer during her lifetime (ACS, 1986). Despite an increasing incidence of breast cancer, longer survival has helped to stabilize mortality rates over the last 50 years (Pollack & Horn, 1980). It is estimated that in 1986, 1,400 Oklahoma women will discover they have breast cancer. In the same year, 450 women in the state will die from the disease (ACS, 1986).

Breast cancer is one of the most serious health problems facing American women today. It is both a national and state concern. Because the causes of breast cancer are unknown, it cannot be prevented. The best hope for recovery lies in early treatment, which depends on early detection and diagnosis. Indeed, nursing advocacy in the form of health teaching can assist women to be informed about the risks and signs of breast cancer, advised how to examine their breasts, and encouraged to do so regularly.

Breast Self-Examination

The earliest documentation of the concept of breast self-examination was in 1919 when the American Cancer Society publicized the "14 Points about Cancer." One of these points was the need to see a doctor about a lump found in the breast (Hall, 1979). Three years later, Bloodgood (1921), a physician, claimed that this educational campaign was causing women to be referred to him unnecessarily. He suggested that physicians diagnosing breast lesions improve their skill of palpation.

Little progress was made until 1948 when Haagensen recommended a procedure for physicians to follow in examination of the breast. In his paper entitled "Self-Examination of the Breast," Haagensen (1952)

described a technique for breast self-examination and recommended its practice every 2 months. About this same time, Popma encouraged national distribution of a professionally produced film on breast self-examination. This project was approved by the American Cancer Society Board of Directors in 1948. Later that year it was being shown throughout the country by the state divisions of the American Cancer Society (Lewison et al., 1954).

Haagensen (1952), concerned for the lack of early diagnosis of breast cancer, developed a specific technique directing women to examine their breasts. Haagensen's technique directed women to examine the breasts in halves, the inner half followed by the outer half. This technique was later modified to divide the breast in quarters. Women were encouraged to examine the inner upper quarter of the breast, then the inner lower quarter, followed by the outer upper quarter and the outer lower quarter. Haagensen's work led to the development of the "Spokes of the Wheel" technique in which the breast is examined in sections from the nipples outward to the edges of the breast tissue (Hall, 1979).

This technique of breast self-examination was encouraged by the American Cancer Society through the 1960s. During the 1970s, The ACS distributed brochures

advocating the current circular technique. In this technique the woman is in the supine position, with the arm above her head on the side to be examined. A folded towel is placed under the shoulder. The woman then imagines that her breast is the face of the clock, with the nipple identified as the center. The exam begins at the top of the breast, at 12 o'clock. After examining that area, the fingers move to the 1 o'clock position, and so on, around the circle. The woman then moves her fingers in toward the nipple approximately an inch and begins the circular movements again until she has assessed the entire breast (ACS, 1978).

There are currently several techniques of breast self-examination. Most authorities agree that the technique is not as important as the fact that the woman be thorough and practice at regular monthly intervals (Strax, 1977). The literature refers to numerous publications and films made by a variety of organizations and individuals on the practice of breast self-examination.

Posters and pamphlets have depicted younger women practicing breast self-examination without acknowledging that older women need to practice this health behavior (ACS, 1978). Strax and Greenwald (1979) pointed out the average breast self-examination pamphlet does not usually

provide sufficient information for practice to postmenopausal women. Sources frequently stress the practice of breast self-examination following the start of the menses without any mention of the recommended time for women after the menopause (ACS, 1972). More recent audiovisual materials are including the importance of breast self-examination in all women.

The National Cancer Institute's (NCI) 1979 National Survey on Breast Cancer disclosed that over 90% of all women are aware of the technique of breast self-examination, and over 75% reported practicing it at least once in the past year. A study conducted for the American Cancer Society indicated the monthly practice of breast self-examination has increased from 18% in 1973 to 27% in 1983. Other reports place the monthly practice rate at 35% (Kegeles & Grady, 1982). Even with heightened awareness, two-thirds of the women in the United States are not currently practicing this health protecting behavior (National Institute of Health, 1981).

A number of authors has described a profile of the breast self-examination practicing woman. These women are generally those who: live with their sexual partner, have been shown how to perform breast self-examination, are

confident in their examination technique, and have a maternal history of breast cancer (Bennett et al., 1983).

Other factors reported in the literature as contributing positively to breast self-examination practice are: life-affirming personality, overall positive health interests, belief in benefits of BSE, formal education, having had a physician breast examination, being instructed in breast self-examination with guided practice, and having confidence in their technique (ACS, 1984). Reported obstacles to the practice of BSE are fear, low income, age over 45 years, lack of access to information, and inhibition about the breasts (ACS, 1984). According to the 1979 National Cancer Institute Survey on Breast Cancer, the vast majority of women who did not practice monthly breast examination said that they "just don't think about it" and are "not that concerned" (NCI, 1980). Common reasons women gave for failing to practice breast self-examination in the American Cancer Society's (1973) survey were ignorance of the importance of breast self-examination, lack of knowledge of methods, fear, and anxiety.

Data from the 1973 ACS survey and 1979 NCI survey revealed the factor most likely to increase the monthly practice of breast self-examination appears to be

instruction by a health professional. Because almost half of all women (47%) have an annual checkup, the annual examination is cited as an excellent opportunity for breast self-examination instruction (Keller, George, & Podell, 1980).

Self-examination of the breast has been strongly advocated for at least 30 years. Recently, there has been empirical evidence to declare value of the practice. Huguley and Brown's (1981) study of 2,092 women with cancer of the breast found that those who had practiced breast self-examination did not always discover their cancer during deliberate breast self-examination. The majority of their cancers was found accidentally or during physician examination or mammography. Regardless of the method, their cancers were detected earlier than those among women classified as nonpracticers.

Greenwald et al. (1978) reported similar findings. This study concluded that tumors found through regular breast self-examination in conjunction with routine examination by a physician were associated with less advanced tumors.

Foster et al. (1978) further demonstrated that more frequent performance of BSE was associated with the following: (a) lower clinical stage of breast cancer, (b)

a smaller tumor diameter, and (c) a higher 5-year survival rate. Another important finding was a significant correlation between age and the reported frequency of BSE before diagnosis of breast cancer. There was a significant negative association between performance and age. Fifty percent of women between 70-98 years of age reported never practicing BSE as compared to 16% of the 28-49 age group. Only 5% of those 70-98 years of age compared to 33% of the 28-49 year olds reported monthly BSE (Foster et al., 1978).

Empirical data demonstrate that an association may exist between the practice of BSE and the early discovery of breast cancer. Both variables may be a reflection of the increased health awareness of these women. However, the evidence is persuasive enough to encourage women to practice breast self-examination. Other advantages are its cost effectiveness and feasibility for widespread use (NIH, 1984).

Health Beliefs

Over the past 2 decades, a number of theoretical frameworks has appeared which attempt to account for motivation toward healthier behavior. These include Rosenstock's (1966) original version of the Health Belief Model (HBM) as well as Becker et al.'s (1977) expanded

version. These models provide familiar frameworks to many researchers involved in the study of health behavior. Recently, Cummings, Becker, and Maile (1980) developed a unified framework for explaining health-related actions. From the 14 models examined in their study, representing 99 variables, 6 factor clusters were formed. These included: (a) accessibility to health care, (b) evaluation of health care, (c) perception of symptoms and threat of disease, (d) social network characteristics, (e) knowledge about disease, and (f) demographic characteristics (Cummings et al., 1980).

The critical construct in many of these models is motivation, which is derived chiefly from the cognitive psychological theories of Lewin (1944) and Atkinson and Feather (1966). Prior to an examination of the health belief model, concepts integral to the model will be considered. The model's variables are drawn from selected aspects of Lewin's (1944) social psychological theory. It is suggested that the Health Belief Model is attributed to a particular case of Lewin's field theory known as goal setting at the level of aspiration situation (Rosenstock, 1966). The "level of aspiration" situation is defined as the degree of difficulty an individual experiences when attempting goals. Lewin (1944) hypothesized that behavior

depended mainly on two variables. These are the value of an outcome to the individual and the individual's estimate of the probability that a given action will result in that outcome (Rosenstock, 1966).

Expanding on Lewin's theory, the Health Belief Model was formulated to explain preventive health behavior. The model has a phenomenological orientation, thereby assuming that the subjective world of the individual determines behavior more so than the environment (Rosenstock, 1966). According to Rosenstock and Kirscht (1974), people can only act on what they believe exists, and not on what others believe. Mikhail (1981) evaluated the Health Belief Model's usefulness to nursing. In the analysis, strengths and weaknesses of the model for research are addressed. Several nurse theorists have used the model recently. Champion (1984) utilized the Health Belief Model and added the concept of control in her study entitled "Instrument Development for Health Belief Model Constructs." Pender (1982) also developed a health protection/health prevention model for nursing. This model describes determinants of health-protecting behavior and is based on a previous model (Pender, 1975) and the Health Belief Model of Becker and Maiman (1974). This combined effort presents an important paradigm for

predicting and explaining the occurrence of health preventive behaviors. Pender (1975) contended that the Health Belief Model has been tested on preventive measures requiring single acts of compliance, such as the prediction of mothers' compliance with pediatric regimens (Becker, 1977). She argues that more attention must be given to the adequacy of the model in predicting and explaining participation in lifelong monitoring activities, such as in the instance of breast self-examination (Pender, 1982).

A number of studies has compared the Health Belief Model concepts to the practice of breast self-examination. Perceptions of personal susceptibility are cited as important reasons for initiating practice in one recent study (Massey, 1986). Massey concluded that women, who reported more frequent breast self-examination practice, perceived themselves to be more susceptible to breast cancer than their counterparts. These findings are also congruent with those of Hallal (1982) and Olenn (1981). Other research has found perceived susceptibility to breast cancer and breast self-examination practice as non-related variables. Stillman (1977) was unable to support the hypothesis that beliefs about breast cancer and breast self-examination affected practice.

Some studies found that fear and anxiety inhibit practice (Gallup, 1974; Stillman, 1977), while other studies found no such relationship (Keller, 1978). Windsor, Kronenfeld, Ory, and Kilgo (1980) found a significant correlation between the practice of breast self-examination and one health belief construct, perceived seriousness. Awareness of the benefits of early detection has been positively associated with practice in some (Gallup, 1974; Kelly, 1979), but not all studies (Champion, 1985; Keller, 1978). Champion (1985) reported that the barriers construct was by far the most significant in predicting frequency of BSE. This result supports findings of previous researchers (Champion, 1984; Trotta, 1980).

The Health Belief Model has been used to explain health practices and beliefs held by individuals. The model is useful in studies such as the present investigation in examining health promotion activities.

Older Women

One of the most significant factors affecting America's present and future course is the aging of its population. This century's dramatic increase in the number and proportion of older persons is reflected in the 1984 population estimates prepared by the U.S. Census

Bureau. At the beginning of the century, 1 in 25 Americans was age 65 and over. By 1984, 1 in 9 Americans was at least 65 years old. In the last 2 decades alone, the 65 and over population grew by 54% while the under 65 population increased by only 24% (Soldo & Manton, 1986).

The U.S. Senate Special Committee on Aging (1986) reported that the majority of elderly persons in their earlier retirement years is relatively healthy and is not as limited in activity as frequently assumed. Many Americans are living longer than ever before, but for many, health problems are delayed rather than eliminated. As a result, the elderly frequently bear a significant financial burden for health care. Direct out-of-pocket health costs for the elderly averaged 15% of their income in 1984 (Special Senate Committee on Aging, 1986). These facts create a significant impact on health service utilization in elderly women.

Financial factors are frequently cited as having a significant impact on the health care of women. Low incomes of older women are largely associated with a pattern of lifelong economic dependency on men and with status changes that occur in old age. In 1984, the median income of elderly women (\$6,020) was approximately half that of elderly men (\$10,450). This discrepancy continues

to increase with age. The economic status of women living alone was lower than that of married women (Special Senate Committee on Aging, 1986). Butler (1975) stated, "The problems of old age in America are largely the problems of women" (p. 5). Since women have a longer age span than men, women over 65 years of age greatly outnumber men in the same age range. In addition, women are at a distinct disadvantage under the United States legal, social security, and pension systems (Lewis & Butler, 1972).

Health seeking behaviors of the elderly population have also been reported in the literature. As people age, they are more likely to take their aches and pains for granted, and to regard ill health and disability as inevitable (Riley, 1983). The fact that older women may disregard changes in the breasts may contribute to the longer delay time in seeking diagnosis. Studies have also identified two potential factors which lead to delay in seeking diagnosis as depression and isolation (Levy, 1983). Cobb, Clark, and McGuire (1954) described the "lag time" in the elderly as being related to less education, having little faith in medicine, lack of referral networks, and lack of finances. Clearly, however, delay in seeking health care is a complex phenomenon and other factors underlie this behavior.

Literature also cites physiological factors distinguishing the elderly population. There are normal changes that occur with aging related to body structure, composition, and function. Sorenson, Seltser, and Sundwall (1983) stated: "While aging is usually progressive and insidious, and most organs show a gradual decline of performance, the decline in organ efficacy is not uniform among individuals" (p. 305).

Women experience many changes in their breasts throughout their lives. Gioiella and Bevil (1985) stated the size of the aging female's breasts remains about the same over the life span. Rumpler (1986) reported a loss of fullness of breast tissue due to atrophy of fat and fibrotic changes. The breasts become elongated, pendulous, and flaccid as a result of glandular tissue atrophy (Rumpler, 1986). The skin of the breasts tends to wrinkle, appearing loose and flabby (Rumpler, 1986). Snyder (1983) warned that normal breast adaptations may mimic breast cancer in some older women and should be differentiated between other suspicious lesions. Snyder (1983) stated, "Classic signs of breast cancer such as mass, dimpling, nipple retraction, peau d'orange, and bloody nipple discharge or crusting are too often present

before the older patient seeks medical care attention or her physician becomes aware of an abnormality" (p. 74).

Recent investigators have identified physiological factors influencing the practice of breast self-examination in older women. Musculoskeletal and/or diminished peripheral sensation changes may prevent effective breast self-examination. Diminished eye sight due to cataracts or glaucoma may interfere with the woman's ability to visualize breast changes (Yancik, 1983). Campos (1985) described various joint changes that affect the range of motion in the upper extremities as limiting palpation abilities.

The abundance of literature and social concern for the aging population has led to new interest in the area of cancer in the elderly. Stromborg (1986) stated that cancer in the elderly is a major health problem. In old age, certain cancers seem to predominate. A few primary sites such as stomach, prostate, colon, and rectum in men, and breast in women, comprise over 50% of the invasive cancers in patients over 60 years of age. The median age at diagnosis for cancer of the breast is around age 60 years (Riley, 1983).

The incidence of cancer increases with age and a disproportionate number of cancer deaths occur in those

individuals over 65 years of age. It is essential that the nurse recognize incentives and barriers to early detection of cancer. Stromborg (1986) cited the obstacles to early cancer detection as follows: societal myths, normal psychosocial alterations, attitudes regarding preventive medicine, and lack of knowledge about normal physiological changes which occur with aging.

Summary

This chapter has presented literature in the areas of breast cancer, breast self-examination, health beliefs, and older women. The seriousness of breast cancer of American women has been described. This factor, together with the decreased frequency of breast self-examination practice in older women, has devastating consequences. Nurses interested in health promotion are concerned about these findings. Through clinical investigation, variables may be identified related to the older woman's practice of health protecting behavior. Based on this assessment, educational programs can then be implemented.

CHAPTER III

PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

Research Design

This investigation utilized a descriptive, correlational approach (Polit & Hungler, 1983). Descriptive, correlational studies have been shown to be useful in examining the systematic relationship that does or does not exist between two or more variables (Waltz & Bausell, 1983). This investigation described the factors associated with older women's practice of breast self-examination and determined direction of future research in the area of health promotion.

Data on the predictor and criterion variables were collected over a 1 month period. The predictor variables were susceptibility, seriousness, benefits, barriers, health motivation, knowledge, and health history. The criterion variable was reported frequency of breast self-examination.

Setting

The setting for the study was eight senior citizen public housing centers. Five of these centers are federally funded apartment complexes which are located in

both urban and suburban communities of a metropolitan city. Criteria for residency in the complexes are that the individuals be 62 years of age or older and be capable of independent living. Rent is based on sliding scale fees and the various centers are located in neighborhoods representing upper, middle, and lower economic status. The remaining three centers are privately owned complexes located in urban and suburban areas of the same city, which are located in upper middle-class neighborhoods. All of the centers are open to all ethnic groups and to both married and nonmarried persons.

Population and Sample

The population studied was older women residing in housing centers. The residency census for the housing centers was approximately 800 at the time of the investigation. Of these, a sample of 500 was selected who met the subject criteria. The criteria were: (a) women only, (b) the woman was required to respond to the questionnaire in English, and (c) the woman be 62 years of age or older.

Protection of Human Subjects

Prior to the initiation of the study, approval was obtained from the university. The study was limited to

use of a questionnaire to be administered to adults and therefore has exempt status by the Human Rights Committee of Texas Woman's University (Appendix A). Permission to enter the federally funded housing centers (Appendix B) was obtained from Health Service Administrator before the study was introduced to the directors. The directors of the private senior citizens housing center's required prior review of the questionnaire and consultation with the investigator. Permission to conduct the study was also received from the graduate school (Appendix C).

The questionnaires were coded and then distributed to the subjects by the housing center's director. Subjects were told not to place their name on the questionnaire in order to maintain confidentiality. This was particularly important since the subject was one of sensitivity to many women.

The time required for completion was 30 minutes and subjects were given 7 days to complete the questionnaire. A follow-up postcard (Appendix D) was sent after 7 days to nonresponders. All data were analyzed as group data.

A cover letter was attached to the questionnaire to inform the subjects of their rights (Appendix E). They were also informed that the return of the questionnaire was considered their informed consent to participate in

the study. This action was essential to this study as the issues of personal safety and privacy were critical to women in this age group.

Instruments

Three instruments were used in this investigation to describe the subjects, their health beliefs, knowledge, and health history as it relates to breast cancer and breast self-examination. The instruments were: (a) Champion questionnaire (1985), (b) Demographic Data Sheet (DDS) and (c) Williams Breast Inventory (WBI). The following descriptions are offered for each instrument.

Champion Questionnaire

The Champion Instrument (1985) (Appendix F) used in this investigation is a 31 item self-report inventory consisting of five scales. Responses were selected from a 5-choice Likert-type scale: strongly agree, agree, neutral, disagree, and strongly disagree. The Health Belief Model provides the conceptual framework for the instrument. Scales include the five constructs of the health belief model (a) Perceived Seriousness, (b) Perceived Susceptibility, (c) Perceived Benefits, (d) Perceived Barriers, and (e) Health Motivation. This instrument was a modification of Champion's (1984)

original instrument which had previously been tested for validity and reliability.

Champion (1985) modified the original instrument by reducing the total number of items to 31. These revised scales have been tested for content and construct validity as well as internal consistency and test-retest reliability. A panel of experts established content validity.

Construct validity of the scales was tested through factor analysis. The method of factor extraction used was principal components factor technique. The rotation procedures selected was the orthogonal rotation. Polit and Hungler (1983) stated orthogonal rotations maintain the independence of factors and lead to greater theoretical clarity.

The scales of Susceptibility, Seriousness, Benefits, Barriers, and Health Motivation were found to be mutually exclusive. A factor loading of .35 for each item was used as an arbitrary criterion. A factor loading of .30 is usually the minimum that will be considered (Waltz & Bausell, 1983). The Barriers scale accounted for approximately 35% of the variance. The factor analysis provides strong evidence for construct validity by

substantiating the independence of constructs as used in the Health Belief Model.

Construct validity was also demonstrated through the use of multiple regression. Multiple regression analysis was computed to test the Health Belief Model constructs with breast self-examination. Multiple R of .51 ($p < .001$) was obtained with 26% of the variance accounted for. The variable barriers accounted for the largest portion of variance (23%) on the dependent variable breast self-examination. Health motivation was an important contributor, even though only 2% of the variance was accounted for relative to the criterion variable. Those persons who identified less barriers were more likely to report increased frequency of breast self-examination. Those persons with higher scores on health motivation reported greater frequency of self-examination. The constructs of benefits, susceptibility, and seriousness did not account for a significant amount of variance.

Reliability indices have also been performed on the Champion Questionnaire. Internal consistency reliability was determined using Chronbach alpha which ranged from .63 to .76. These results compare closely to those obtained from earlier work (Champion, 1984). The test-retest reliabilities are somewhat lower than those in the

original instrument. This may be a result of a difference in intervals between the first and second study's testing; the second study had a 4-week interval between testing compared to 2 weeks in the first study.

Correlation coefficients for test-retest reliability were .7 on the following scales: Susceptibility, Seriousness, Barriers, and Health Motivation. The Benefit scale evidenced the lowest correlation coefficient for test-retest reliability which was .61. Coefficients in the range of .60 to .70 are sufficient to demonstrate reliability (Polit & Hungler, 1983).

To further evaluate the Champion questionnaire's usefulness with this particular population, the investigator sought consultation with a geriatric nurse practitioner. On the basis of her evaluation, the one page questionnaire was enlarged to two pages to accommodate the vision of the older individual.

Demographic Data Sheet

The Demographic Data Sheet (DDS) (Appendix G) was developed for this study to describe the sample. The instrument elicited data to describe subject variables of: (a) age, (b) race, (c) marital status, (d) religious preference, and (e) educational level.

Williams Breast Inventory

This instrument was developed by the investigator, based on the literature and in consultation with a geriatric nurse practitioner and an expert in epidemiology and biostatistics. The Williams Breast Inventory (WBI) (Appendix H) consists of two sections; health history and personal knowledge. Data elicited from the Health History section included items evoking the following information; (a) previous treatment for benign breast disease, (b) history of close friends with breast cancer, (c) subject's personal history of cancer, (d) family member history of breast cancer, and (e) report of breast examination in last physical exam.

The second section of the Williams Breast Inventory, Personal Knowledge, includes items regarding personal knowledge of breast cancer and breast self-examination. This section consists of 10 items (numbered 8-17). Item #8 relates to an individual's major source of information about cancer. Item #9 determines if the woman had ever been taught breast self-examination. Item #10 asks how she was taught.

Item #11, the criterion variable, measures reported frequency of breast self-examination, and represents an interval scale measurement. Items #12-17 comprise the

Knowledge Scale. The generation of these items was based on the work of Young (1981), Wilkinson (1980), and Petrakis et al. (1982). For each item on the Knowledge Scale there is a forced response choice of "true" or "false". A summed score of 0 to 2 indicates a low level of knowledge, a score of 3 to 4 indicates a moderate level of knowledge, and a score of 5 to 6 indicates a high level of knowledge.

Data Collection

The investigator introduced the study to the directors of the senior housing centers through personal interviews. During these interviews the following information was stressed: (a) the voluntary nature of the study, (b) encouragement of subjects to read the cover letter informing them that their responses would be kept confidential, (c) the return of the questionnaire would be considered consent for participation, and (d) criteria to participate in the study.

The investigator and director jointly identified residents who met subject criteria. The questionnaires were then coded and administered by the directors. The investigator was available in the center the day the questionnaires were delivered to answer questions and assist women with completion. The subjects were requested

to complete the questionnaire within 7 days and return it in the self-addressed stamped envelope. Those women who did not return the questionnaire by day 7 were sent a reminder post card (Appendix D).

Pilot Study

The pilot investigation is used as a preliminary testing of the hypothesis through trial of the study methods and instruments (Issac & Michael, 1982). In order to test the utility of the instruments to this particular population, a pilot study was conducted. The purposes of the pilot study were: (a) to determine if items were easy to understand and described constructs related to breast self-examination, (b) to determine perceived difficulty in answering questions, and (c) to establish reliability and validity.

The following results were obtained from the pilot investigation. A non-random sample of 30 women, aged 60 years and over, was selected by referral to the study by nursing faculty and by voluntary participants from a senior citizens center. The major results are described as follows: The study yielded a return rate of (86%) or 26 questionnaires. Three of the subjects were excluded from the study due to incomplete data yielding a total number of 23 (77%) for data analysis. The sample's mean

age was 68 with an age range from 60-80. Slightly over 54% of the women were married and 45% were widowed. The races represented were as follows: (a) American Indian, 2 (1%), (b) Black, 3 (13.6%), (c) Caucasian, 17 (73.2%), and (d) Hispanic, 1 (4.5%). Seventy percent of women were Protestant, 25% Catholic, and 5% were other. The mean educational level was slightly above the 12th grade. The educational range included grades 7 to completion of college.

The criterion variable, frequency of breast self-examination, was reported as frequency in intervals of months. Twenty-two women responded to this item. One woman (4.5%) reported the practice more than once a month. Five women (22.7%) reported the practice every month. Six women (26%) reported every other month. Seven women (30%) reported the practice every 3 to 4 months. There were no women reporting practice every 5 to 6 months. Three women (13%) reported the practice less than every 6 months. It was noted that the woman reporting practice more than once a month had indicated breast cancer in her health history.

The following methodological changes were made based on the findings from the pilot study. To enhance credibility to the investigation, the American Cancer

Society's letterhead was used on the cover letter. The American Cancer Society, Oklahoma Division, provided financial assistance for the investigation. As none of the subjects in the pilot asked for results of the study, these were not offered to each subject, but were sent to each housing center's director for posting. As previously stated, the subjects could contact the investigator should questions or concerns arise. The cover letter was shortened to minimize time required for reading.

Changes were also made in the three instruments. The Champion questionnaire retained all 31 items. Internal consistency reliability was determined using Chronbach alpha which ranged from .54 to .80. The instrument had the following reliability coefficients for the scales; Susceptibility, .80; Barriers, .77; Health Motivation, .67; Seriousness, .64; and Benefits, .54. A factor analysis was performed, but with inadequate results due to the small sample size. The only modification of this instrument was to increase the area for subjects' checkmarks. In the pilot study some of the responses were unable to be interpreted when subjects made more than one check in a box. Another change made was in the directions given to the subjects. Because many items were skipped, a plea to answer each item was included.

The following changes were made in the Demographic Data Sheet: Item #1 was restated to ask, "What is your age", and not "How old are you"? Item #2 added White to the option Caucasian. This was necessary as many subjects were not familiar with the term "Caucasians". The item asking the degree of Indian heritage was deleted as the American Indians in the pilot study did not complete this option.

The Personal Knowledge section of the Williams Breast Inventory (WBI) was reduced to 10 items to ask only those questions of significance to the study. The multiple choice questions were changed to true and false format. The subsections were maintained to include information regarding health history and personal knowledge.

Treatment of Data

All data were analyzed using the statistical Package for Social Sciences (Nie, Hull, Jenkins, & Steinbrenner, 1975). Reliability and validity indices were performed on the Champion questionnaire and subject data were analyzed using parametric and nonparametric statistics.

Before accepting an instrument, an investigator must evaluate it thoroughly (Polit & Hungler, 1983). Factor analysis was included for construct validity and theory testing of the Champion instrument (Burt, 1952). A tool

cannot be valid without being reliable. The reliability of an instrument is a major criterion for assessing its quality and adequacy (Polit & Hungler, 1983). In order to statistically determine this type of reliability, Cronbach's alpha was computed for each scale. Coefficients of .60 or greater on each scale were used to determine reliability.

The results of the multiple regression analysis were used to test each of the research hypothesis. Multiple linear regression is used to determine the degree of relationship between a criterion measure (dependent variable) and a weighted combination of two or more predictor measures (independent variables) (Isaac & Michael, 1982). A significance level of .05 was used to accept or reject the hypotheses. This is the minimum level of significance accepted for scientific research (Polit & Hungler, 1983).

The independent variables of Hypotheses 1-5 were the five constructs of the Champion questionnaire. The hypotheses were tested using multiple regression analysis in order to consider the combined effect of Susceptibility, Seriousness, Benefits, Barriers, and Health Motivation on frequency of breast

self-examination. The dependent variable was frequency of breast self-examination.

Hypotheses 6 and 7 related to the Williams Breast Inventory. Hypothesis 6 related to Personal Knowledge and included items 12-17. This hypothesis was analyzed using Spearman correlation coefficients in order to correlate knowledge with frequency of breast self-examination. Spearman's rho is cited as an appropriate nonparametric test of relationship (Siegel, 1956).

Hypothesis 7 related to the health history section of the Williams Breast Inventory. Multiple regression was used to determine the relationship between health history variables and actual practice of breast self-examination. Frequencies and percentages were performed to describe the sample's practice of breast self-examination, health history variables, and personal knowledge of breast cancer and breast self-examination.

The demographic data were analyzed to describe the study sample. Descriptive statistics determined mean, frequencies, and percentages on the data. These descriptive statistics were beneficial in summarizing the characteristics of the sample (Kerlinger, 1973).

CHAPTER IV

ANALYSIS OF DATA

Data were collected, as described in the study methodology, from subjects in each of the eight senior housing centers. The investigator was present at the time of data collection to answer questions or assist subjects with completion. Subjects were asked to mail the questionnaire within 7 days. Ten days following this initial distribution, 226 questionnaires (45%) were returned. Those subjects not returning the questionnaire were sent a follow-up postcard. This procedure has been recommended in questionnaire research (Dillman, Christenson, Carpenter, & Brooks, 1974; Linsky, 1975). An additional 51 (19%) questionnaires were returned for a total return rate of 277 (55%). According to Polit and Hungler (1983) a response rate greater than 50% is generally adequate in this type of investigation.

At the completion of data collection, follow-up breast self-examination programs were scheduled in each of the housing centers. To date, three programs have been presented and five others are forthcoming.

These data have been analyzed and categorized into demographic data, reliability and validity of the scales,

and results relevant to the study hypothesis. Finally, a condensed review of all findings is presented. A large amount of data was obtained in the form of subject comments. These comments will be presented and discussed in Chapter V.

Description of Sample

The sample was composed of 500 women residing in the senior housing centers. All subjects met the criteria specified in the study methodology. A total of 277 residents returned the questionnaire. Of these 277 respondents (55%), the data from 253 (51%) subjects were used in the analysis. Twenty-four participants (9%) returned incomplete data and were excluded from data analysis.

Description of the subjects was obtained from analysis of the Demographic Data Sheet (DDS). The subjects ranged in age from 62 years to 93 years, with a mean age of 73 years. Sixteen (6%) subjects did not report their age. Two hundred twenty (87%) of the subjects were Caucasians, with 31 (12%) Black, and 2 (1%) American Indian. Marital status of the 253 subjects included 8 (3.2%) never married, 78 (30.8%) married, 139 (54.9%) widowed, and 28 (11.1%) divorced. Religious preference of the subjects was as follows: 233 (92%) were

Protestant, 10 (4%) Catholic, 5 (2%) other, and 4 (1.6%) listed no preference. Table 1 presents a summary of the subjects' level of education.

Table 1

Frequency and Percentage of the Educational
Level of the Subjects

Educational level	Frequency	Percentage
No formal education	1	.25
Grades 1-6	11	4.4
Grades 7-9	37	14.7
Grades 10-12	98	38.9
Technical school	27	10.7
College (1-4 years)	67	26.6
Graduate	12	4.8

N = 253.

Table 2 reports the frequency of breast self-examination. Twenty-nine (11%) of the subjects indicated that they performed breast self-examination more than once a month. The once a month classification was selected by 54 (23%) of the sample. Eighteen subjects (7%) reported performing breast self-examination 3 to 4

times a year. Twenty-nine subjects (11%) indicated BSE practice once or twice a year, while 65 (26%) had no current BSE practice.

Table 2

Frequency and Percentage of Practice Rate of
Breast Self-Examination

Breast self-examination	Frequency	Percentage
Greater than once/month	29	11
Once a month	57	23
Every other month	18	7
3-4 times/year	55	22
1-2 times/year	29	11
No practice	65	26

N = 253.

The demographic variables of age, marital status, race, religion, and education depict the study sample as a diverse group representative of the population of older women. Summary of the practice rate of breast self-examination suggested that 66% practiced BSE less frequently than the recommended monthly interval.

Reliability and Validity

Construct validity of the Champion (1983) scales was tested through factor analysis. According to Waltz and Bausell (1983), factor analysis is an empirical data reduction tool which clusters individual items into linear combinations called factors. In the analysis of the Champion scales, seven factors with eigenvalues of 1 or more were identified, using variables with loading of 0.3 or more as definers of the factors. Eigenvalues represent the amount of variance accounted for by a factor (Hair, Anderson, Tatham, & Grablovsky, 1979). Many investigators establish as their cutoff point for factor extraction eigenvalues less than 1.00 (Polit & Hungler, 1983). Based on this criterion all seven factors qualify for inclusion in the study. Table 3 presents eigenvalues, percentage of variance accounted for, and cumulative percentage of variance, for the 7 factors.

The factor loadings (weights) became more distinct after the orthogonal rotation process was applied. Some investigators maintain that the orthogonal rotation leads to greater theoretical clarity (Polit & Hungler, 1983). The seven factors accounted for 56.4% of the total variance in the five constructs. Table 4 displays the factors, variables (items from Champion questionnaire) and

Table 3

Summary of Factor Extraction Results

Factor	Eigenvalue	Percent of Variance	Cumulative Percent of Variance
Factor 1	5.4	17.3%	17.3
Factor 2	4.4	14.3	31.7
Factor 3	1.8	5.9	37.6
Factor 4	1.6	5.4	43.0
Factor 5	1.4	4.8	47.8
Factor 6	1.3	4.4	52.2
Factor 7	1.2	4.2	56.4

Table 4
Factors, Variables, and Corresponding Weights as Computed
in the Factor Matrix

Factor analysis	Champion questionnaire Item	Weight
<u>Factor 1. Benefits</u>		
	CH3	.60
	CH13	.76
	CH18	.77
	CH27	.37
	CH29	.74
	CH31	.20
<u>Factor 2. Susceptibility</u>		
	CH1	.57
	CH6	.22
	CH11	.69
	CH12	.37
	CH14	.64
	CH16	.85
	CH26	.79
<u>Factor 3. Seriousness</u>		
	CH2	.49
	CH5	.44
(table continues)		

Factor analysis	Champion questionnaire Item	Weight
	CH7	.52
	CH8	.73
<u>Factor 4. Health Motivation</u>	CH10	.35
	CH15	.53
	CH20	.63
	CH24	.69
	CH25	.35
	CH30	.73
<u>Factor 5. Seriousness</u>	CH17	.77
	CH22	.65
<u>Factor 6. Barriers</u>	CH9	.43
	CH21	.59
	CH28	.66
<u>Factor 7. Barriers</u>	CH4	.44
	CH19	.77
	CH23	.40

their corresponding weights as computed in the rotated factor matrix.

Construct validity was also measured on the Champion questionnaire through the use of Multiple Regression. Multiple regression analysis was computed to test the health belief model constructs with breast self-examination. A multiple R of .55 ($p < .05$) was obtained with 30% of the variance on breast self-examination accounted for by the variables of susceptibility, benefits, barriers, and health motivation; seriousness did not contribute to the total variance. To interpret the relative importance of the independent variables on the dependent variable the standardized regression coefficient, called a beta weight is used (Jendrek, 1985). The values of beta for susceptibility and benefits were .16 and .14 respectively. The betas obtained on health motivation and barriers were .28 and .33; respectively, and were highly significant at the .00001 level. The beta weight on seriousness was -.09 and was not statistically significant. Table 5 identifies output from multiple regression of Champion scales and the dependent variable, breast self-examination.

The widely used method of coefficient alpha (or Cronbach's alpha) was used to estimate the instrument's

Table 5

Stepwise Multiple Regression of Champion Scales by Frequency
of Breast Self-Examination

Scale	<u>B</u>	SE B	Beta	<u>p</u>
Health Motivation	.17741	.03371	.28333	.0000
Barrier	.16491	.08146	.33311	.0000
Susceptibility	.06963	.02760	.15828	.0123
Benefits	.07983	.33922	.14235	.0209
(Constant)	-3.15235	.33922		-3.756
MR	.55			
r ²	.30344			

N = 253.

reliability. Coefficients of .60 or greater on each scale were used (Polit & Hungler, 1983). The internal consistency coefficients ranged from .66 to .78. Each scale included 6 or 7 items. The results of each scale including the number of items and internal consistency coefficient are presented in Table 6.

Table 6

Reliability Analysis for Champion Scales

Scale	Number of items	Internal consistency coefficient
Susceptibility	6	.78
Benefits	6	.74
Seriousness	7	.72
Barriers	6	.66
Health		
Motivation	6	.66

N = 253.

Findings

The five research hypotheses of the Champion questionnaire, and the two hypotheses derived from the Williams Breast Inventory were analyzed using the Statistical Package for Social Sciences (Nie et al., 1975).

Data on Hypotheses 1 through 5 were analyzed using a stepwise multiple regression to test the combined constructs of susceptibility, seriousness, benefits, barriers and health motivation on breast self-examination. Theoretically, a health behavior is explained by the additive influence of each of the five variables (Champion, 1985).

Hypothesis 1 was: There will be a relationship between Perceived Susceptibility and frequency of breast self-examination in a population of older women.

This scale measures the individual's perceived risks of contacting a specific condition with a specific time period (Champion, 1984). Susceptibility accounted for 3% of the variance on the dependent variable of breast self-examination. While this relationship is low, it was the third most important after health motivation and barriers. This produced a p score of .001. The hypothesis was accepted.

Hypothesis 2 was: There will be a relationship between Perceived Seriousness and frequency of breast self-examination in a population of older women. This scale measures the perceived degree of personal threat that an individual associates with a specific condition. Threat in this sense refers to the perceived harmful consequences of the condition in relation to altering the individual's physical health, role and social status, and ability to complete desired tasks.

This variable did not account for any of the variance. There was no significant relationship between perceived seriousness and frequency of breast self-examination. Thus, the hypothesis was rejected.

Hypothesis 3 was: There will be a relationship between Perceived Benefits and frequency of breast self-examination in a population of older women.

This scale measures the belief a person has in the effectiveness of a behavior in preventing or detecting disease, maintaining health, or reducing undesirable consequences of a disease condition. The benefits construct accounted for 1% of the variance. The hypothesis was accepted.

Hypothesis 4 was: There will be a relationship between Perceived Barriers and frequency of breast self-examination in a population of older women.

The scale of Perceived Barriers is defined as the negative aspects of an anticipated behavior which would be undertaken for the purpose of preventing or detecting disease, maintaining health and curing or reducing undesirable consequences of a disease state (Champion, 1985).

Barriers accounted for the second largest portion of variance (8%) on the criterion variable. Thus, individuals perceiving few barriers to breast self-examination were more likely to report increased frequency of breast self-examination. The hypothesis was accepted.

Hypothesis 5 was: There will be a relationship between Health Motivation and frequency of breast self-examination in a population of older women.

This scale measures an individual's state of concern about general health matters which results in positive health activities and willingness to seek and follow patterns which are believed to decrease disease (Champion, 1984). Health motivation accounted for the largest portion of variance (18%) on the dependent variable of

frequency of breast self-examination. The hypothesis was accepted.

Hypothesis 6 was: There will be a relationship between the Knowledge of breast cancer and frequency of breast self-examination in a population of older women.

Knowledge was defined as information gained through previous education or experience, and was measured by summing the scores on items 12-17 of the Williams Breast Inventory. Individuals were ranked on a knowledge score from 1 to 6 with 6 as the highest knowledge score and 1 the lowest. The practice of breast self-examination was measured at monthly increments. This hypothesis was tested using the Spearman Correlation Coefficient. The result was $r = .16$ which was significant at .009. Knowledge correlated with increased frequency of breast self-examination. The hypothesis was accepted.

Hypothesis 7 was: There will be a relationship between Health History and frequency of breast self-examination in a population of older women.

Health History is defined as a woman's previous instruction in breast self-examination and personal experiences with breast disease, and breast cancer in friends and relatives. These variables were then related to practice of breast self-examination. A multiple

regression analysis was performed to test the hypothesis and yielded the following results; 5 of the health history variables were significant in predicting increased frequency of breast self-examination. A multiple r of .52 (p .05) was obtained; 27% of total variance was accounted for by these five health history variables as follows: 21% of the variance on BSE was accounted for by the health history variable, examination by health care provider; doctor (16%) or by nurse (5%), 2% of the variance was accounted for by being taught BSE by doctor and 3% if taught BSE by nurse and 1% of the variance was contributed by those subjects having had no history of skin cancer. The constant in this analysis, 5.1, indicates less frequent breast self-examination practice. The final integration of the stepwise multiple regression is illustrated in Table 7. The table includes the variables, partial regression coefficient, (B) standard error (SE B) and standardized regression coefficient (Beta).

Additional Findings

Data from the health history revealed that 15 women were post-mastectomy. Two of these had experienced bilateral mastectomy. Their reported breast self-examination practice rate is as follows: 5 (33%) more than once a month; 2 (13%) every month; 2 (13%) every

Table 7

Stepwise Multiple Regression of Health History Variables by
Frequency of Breast Self-Examination

Variable	B	SE B	Beta	p
Exam by doctor	1.30973	.21330	-.3138	.0000
Exam by nurse	.83930	.25380	-.19385	.0011
Doctor taught	.84711	.24804	-.21482	.0028
Nurse taught	1.68115	.55606	-.18509	.0028
Skin cancer	-.87681	.43781	.11498	.0464
(Constant)	5.10514	.21757		.0000
Multiple \underline{R} = .52				
\underline{R}^2 = .27				

\underline{N} = 227.

other month; 1 (7%) 3-4 times a year; 2 (13%) 1-2 times a year; 3 (20%) not currently practicing. Interestingly two of the three women in the category of not currently practicing BSE had experienced post bilateral mastectomy.

The family health data were also notable. The reported number of relatives with breast cancer was as follows: 6 (2%) maternal grandmother; 2 (.8%) paternal grandmother; 18 (7%) mother; 34 (13%) sister; 23 (9%) maternal aunt; 14 (6%) paternal aunt; and 1 (.4%) daughter.

Methodological Summary

Some methodological issues were of significance during this investigation. Return of the questionnaire with this particular population, was more difficult to obtain than in the pilot investigation. Seventy-seven percent of the pilot's nonprobability sample returned useable questionnaires and 51% of this study's sample returned useable questionnaires.

The investigator noted that subjects were very interested in completing the questionnaire when the investigator used an interview approach to assist their completion. This technique was not considered to be practical for the entire sample. The required 200 subjects for statistical analysis in this investigation meant that interviewing would be a costly undertaking.

Questionnaires, relative to interview schedules, are generally less costly to administer (Polit & Hungler, 1983). Another consideration afforded by questionnaires, unlike interview schedules, offers the subject increased confidentiality (Polit & Hungler, 1983). Questionnaires often yield less validity conflict resulting from subjects using socially desirable responses. Despite the fact that subjects were informed that their responses would remain confidential, many respondents identified themselves either by signing the questionnaire or including their name and address on the return envelope. This action would indicate that many women were not concerned with confidentiality.

Many questionnaires were not useable possibly due to the format of the questionnaire. Missing data may have been avoided using more specific instructions such as a notation asking respondents to "please turn the page."

A problem with item format not foreseen related to subjects having had bilateral mastectomy. These subjects (2) answered the items pertaining to health motivation easily, however, for items pertaining to their susceptibility to breast cancer they selected a neutral response. Those having had unilateral mastectomy (13)

were able to complete the questionnaire as the threat of breast cancer continued to exist.

A comments section was excluded in this investigation as only one subject (4%) had included comments in the pilot study. Even though there was no specific section for comments in the investigation, 32 (13%) of the respondents included remarks. These comments yielded very interesting information and will be discussed in Chapter V.

One weakness in the methodology was noted in the knowledge section of the Williams Breast Inventory related to the true and false questions. Numerous women indicated that they did not know the answer. An additional column to include these responses was needed.

Summary of Findings

Analysis of the data indicated that four of the hypotheses derived from the Champion Scales were accepted as relating to frequency of breast self-examination. These scales were Perceived Susceptibility, Perceived Barriers, Perceived Benefits, and Health Motivation. The hypothesis relating to the scale of Perceived Seriousness was rejected as it did not contribute to the older woman practicing breast self-examination.

The hypotheses regarding Health History and Personal Knowledge were accepted. The health history factors most

contributing to BSE practice included examination by a physician and nurse taught BSE instruction. Previous history of skin cancer was negatively related to BSE practice.

CHAPTER V

SUMMARY OF THE STUDY

The problem of the study was to determine what variables are predictive of breast self-examination in a population of older women. This study tested the health protecting behavior of breast self-examination using the scales of the Champion Instrument (1985) and the Williams Breast Inventory. These instruments are based on the Health Belief Model (Becker et al., 1977). The Health Belief Model is a psychosocial formulation developed to explain an individual's health related behavior (Becker et al., 1977). This conceptual framework contributes to knowledge as to why people do or do not take actions to prevent, detect, or treat diseases.

The analysis of the data supported the Health Belief Model, as four of the five variables were significant in accounting for variances in the frequency of BSE. In addition, Knowledge and Health History were related to BSE in this population of older women. This investigative approach provided a prescriptive framework from which nurses can organize and integrate cancer prevention strategies specific to the needs of older women.

Summary

This research involved a descriptive, correlational approach. Following selection of eight senior citizen's housing centers as sites for the study, the investigator introduced the study to the directors. Together the investigator and directors identified residents who met subject criteria. Five hundred questionnaires were then coded and administered by the directors.

The sample of the investigation consisted of 253 women between the ages of 62 to 93. Each subject completed the Champion questionnaire, the Demographic Data Sheet and the Williams Breast Inventory. These instruments were used to test the seven research hypotheses and describe the sample. Five research hypotheses reflected the five constructs of the Champion questionnaire. Two research hypotheses reflected knowledge and health history derived from the Williams Breast Inventory.

Seven research hypotheses were posed:

1. There will be a relationship between Perceived Susceptibility and frequency of Breast self-examination in a population of older women.

2. There will be a relationship between Perceived Seriousness and frequency of breast self-examination in a population of older women.

3. There will be a relationship between Perceived Benefits and frequency of breast self-examination in a population of older women.

4. There will be a relationship between Perceived Barriers and frequency of breast self-examination in a population of older women.

5. There will be a relationship between Health Motivation and frequency of breast self-examination in a population of older women.

6. There will be a relationship between the knowledge of breast cancer and frequency of breast self-examination in a population of older women.

7. There will be a relationship between health history and frequency of breast self-examination in older women.

Data on Hypotheses 1 through 5 were analyzed using a step-wise multiple regression to test the combined constructs of susceptibility, seriousness, benefits, barriers, and health motivation. Hypothesis 6 was statistically tested using the Spearman correlation coefficient. Multiple regression was also used on

Hypothesis 7 involving the variables of the health history section of the Williams Breast Inventory.

Reliability indices were computed for each scale using Cronbach's alpha. All scales reached the previously stipulated reliability coefficient of .60. Validity of the instrument was established through Factor Analysis. Seven factors with eigenvalues of 1 or more were identified using loadings of 0.3 or greater. The scales of Benefits, Susceptibility, and Health Motivation were found to be mutually exclusive. The scales of Seriousness and Barriers were bipolar.

Discussion of Findings

Analysis of the demographic data revealed a relative homogeneous group. The data produced a majority of subjects who were white, widowed, and Protestant. The average age of subjects was 73. The average educational level was 10-12 grade which is slightly above that for the general population. Findings are descriptive of a population of older women (Special Senate Committee on Aging, 1986).

Breast self-examination practice in this sample was similar to that of the 33% practice rate of the general population (Howe, 1981). Twenty-three percent of this sample practiced on a regular basis. This frequency is

much higher than that found by Foster and Costanza (1984) in a population of older women. This study sample did include women post-mastectomy.

Forty-six percent of women experiencing mastectomy practiced BSE on a regular basis. This result is significantly below the study by Hirshfield-Bartek (1982), in which 72% of women following treatment for breast cancer practiced monthly or more frequently. The women in that study ranged in age from 29 to 76. The findings of this study may be suggestive of decreased instruction provided to older women following mastectomy.

A significant relationship was found between Perceived Susceptibility and frequency of breast self-examination. Susceptibility accounted for 3% of the variance on the dependent variable. These results support those obtained by Massey (1986) in which older women did not perceive themselves as susceptible to breast cancer as younger women. It may be that public education on breast cancer has focused on the woman under 50 giving older women a false sense of security.

No significant relationship was found on frequency of BSE and Perceived Seriousness. This supports the results described by Champion (1985). The health belief model postulates that seriousness combines with susceptibility

to produce a threat. If women do not perceive themselves susceptible to breast cancer they may avoid focusing on its harmful effects as well. On the other hand, women may be so fearful of breast cancer that they deny it and avoid BSE all together.

A relationship was found to exist between Perceived Benefits and breast self-examination. This variable accounted for 1% of the variance on the dependent variable. Champion (1985) found a small but significant relationship between Perceived Benefits and breast self-examination. Many investigators identify benefits of practicing BSE when barriers are decreased.

There was a significant relationship between Perceived Barriers and practice of BSE. Barriers was the second most important concept, accounting for 8% of the variance. Champion also concluded that barriers accounted for the largest portion of variance (23%) on the dependent variable of frequency of BSE. Trotta (1980) also found this variable to be predictive of BSE practice.

Health Motivation was highly related to breast self-examination, accounting for 18% of the variance. In Champion's (1985) study, health motivation contributed 2% of the variance. The difference in mean ages of the two samples may be an important factor. The mean age was 33

in the Champion study as compared to the present investigation's mean age of 73. Other investigators have found increased health motivation in older adults when screening for colo-rectal cancer (Snyder et al., 1980).

A significant relationship was also found between knowledge and breast self-examination practice. The correlation of .16 was low, but significant. Champion (1985) did not find knowledge to be predictive of practice. This variable was tested by the researcher developed Williams Breast Inventory and further validity testing is warranted.

Health History and frequency of BSE were also related. Two health history variables predictive of BSE practice have been cited in other studies (Champion, 1985; Trotta, 1980) to include breast self-examination and instruction by nurse or doctor. These findings were supported by the present investigation as subjects who had physician examination or nurse instruction were more frequent BSE practitioners.

A new finding in the study was that women with previous benign skin cancer were not likely to perform BSE. This finding is based on the multiple regression analysis of the health history data. Those women who have experienced benign skin cancer may believe they are

invulnerable to other types of cancer. They may not perceive the seriousness of cancer because of their successful treatment.

Subjects' Comments

Several women chose to include comments with their questionnaires which provided valuable information and spice to the study. Some women identified participation in the study as an educational intervention in itself. In the words of one subject who responded to the question, How often do you perform BSE?," "Every month, starting this month!" Two women sent the questionnaires back without completing them, but included reasons. One responded that she was too ill with asthma and the other stated she was too busy.

Women shared interesting comments concerning demographic data. Several included notes about ongoing educational pursuits. One woman justifiably proud of her accomplishments stated she had completed a Bachelor's degree at the age of 67. Some women's responses to the question on age included: "legal" and "over 65."

Several of the women in the study who had a history of breast cancer shared their experience. Many of them wrote short notes, giving the year their cancer was

discovered, and sometimes, which breast was affected. One of the richest descriptions follows:

My breast cancer was discovered through the American Cancer Society's Volunteer Breast Screening Program several years ago. And, as a result of finding it early, I did not have to have chemotherapy or cobalt. It will be 9 years this July since I had my surgery. I still go for a mammogram every 6 months.

One woman had bilateral mastectomy surgery at the age of 70. Other women talked about having had benign breast disease, and described various treatments over the years. These women illustrate that it is not too late to begin the practice of breast self-examination.

Another woman who had "fibrous cysts" in her breasts had numerous biopsies, but "no malignancy," She stated, "self-exam for me would mean finding several fibrous lumps." She did not currently practice BSE. This woman illustrates problems older women encounter with BSE because of normal aging.

Conclusions and Implications

The conclusions based on the present study can be applied to the population from which the subjects were drawn. The present investigation was of significance to nursing concerned with the health promotion of older women. This investigation supported the relationship of the health belief model variables to the behavior of

breast self-examination. The instruments used were important tools in assessing this population. Slight modification of the Champion instrument would assist nurses in assessing health belief model variables prior to teaching BSE.

The study was timely considering the large number of women in the housing centers with limited knowledge about breast cancer and breast self-examination. The implications gleaned from the study included the following based on the data analysis. The finding that perceived seriousness and perceived susceptibility did not predict breast self-examination practice has numerous implications for nursing. The severity of the disease combined with the increasing risk as one ages need to be emphasized in instructional activities.

The benefits of early detection and the barriers of fear and anxiety must be addressed. Specific barriers to practice in this population must be identified. The social barrier of embarrassment was not as prevalent in this study as is reported in the literature (Strax & Greenwald, 1979). Nurses involved in health teaching in a variety of settings need to identify women's barriers to practice. For many older women, a common barrier is misunderstanding of the findings of their breast

self-examination. Women frequently detect lumps or changes in the breast but accept them as normal aspects of aging (Snyder, 1983). Additional consultation must be provided. Women need to have access to health care professionals who can interpret the findings of their breast self-examination. These are implications for an interdisciplinary approach.

The fact that health motivation provided a positive relationship with BSE should direct nurses to assist women who are already engaging in health motivation activities. This could include such settings as an exercise class at the senior citizens' centers or other settings of health activities.

Knowledge is critical to a woman's self-care practices. Women need good knowledge regarding breast cancer and breast self-examination. Nurse teaching of BSE made a significant difference in practice rates and, therefore, nurses need to be prepared to teach this health protecting behavior. A curriculum based on specific needs of older women is required to prepare nurses as BSE instructors.

Recommendations for Further Study

As a result of the present study, the investigator determined the following areas as warranting further study:

1. Would a qualitative approach such as an interview schedule yield similar results?
2. Would a longitudinal study of the health protecting behavior of BSE be reported differently?
3. Is there a relationship between race, educational level, and living arrangements on BSE practice?
4. What variables are predictive of breast self-examination practice in a population of older women who have had breast cancer treatment?
5. Why do women with a history of skin cancer have decreased frequency of BSE practice?

REFERENCES

- Aho, W. (1979). Participation of senior citizens in the swine flu inoculation program: An analysis of health belief model variables in preventive health behavior. Journal of Gerontology, 34(2), 201-208.
- Ajzen, I., & Fishbein, M. (1980). Understanding attitudes and predicting social behavior. Englewood Cliffs, NJ: Prentice-Hall.
- American Cancer Society. (1972). Five minutes to BSE (film). New York: Author.
- American Cancer Society. (1973). Women's attitudes regarding breast cancer. New York: Gallup Organization.
- American Cancer Society. (1978). How to examine your breasts (pamphlet). New York: Author.
- American Cancer Society. (1984). Women's attitudes regarding breast cancer. New York: Gallup Organization.
- American Cancer Society. (1986). Cancer facts and figures. New York: Author.
- American Nurses' Association. (1986). Standards of community health nursing practice. Kansas City: Author.
- Anderson, D. (1982). Familial predisposition. In D. Schottenfeld & J. Fraumeni (Eds.), Cancer epidemiology (pp. 483-493). Philadelphia: W. B. Saunders.
- Antonovsky, A., & Katz, R. (1970). The model dental patient: An empirical study of preventive health behavior. Social Science Medicine, 4, 367-379.
- Atkinson, J., & Feather, N. (Eds.). (1966). A theory of achievement motivation. New York: John Wiley.
- Becker, M., & Maiman, L. (1975). Sociobehavioral determinants of compliance with health and medical care recommendations. Medical Care, 13(1), 10-24.
- Becker, M., Haefner, D., & Kasl, S. (1977). Selected psychosocial models and correlates of individual health-related behaviors. Medical Care, 15, 27-46.

- Bennett, S., Lawrence, R., Fleischmann, K., Gifford, C., & Slack, W. (1983). Profile of women practicing breast self-examination. Journal of American Medical Association, 249(4), 488-491.
- Bjarnason, O., Day, N., & Snaedal, G. (1974). The effect of year of birth on the breast cancer age-incidence curve in Iceland. International Journal of Cancer, 13, 689-696.
- Bloodgood, J. (1921). The pathology of chronic cystic mastitis of the female breast. Archives of Surgery, 3, 445-542.
- Bloom, M. (1975). The paradox of helping: Introduction to the philosophy of scientific practice. New York: John Wiley and Sons.
- Boatman, K. (1985). To modify or not. Oklahoma Oncology Nursing News, 6(3), 4-5.
- Buell, P. (1973). Changing incidence of breast cancer in Japanese-American women. Journal of National Cancer Institute, 51, 1479-1483.
- Burt, C. (1952). Tests of significance in factor analysis. The British Journal of Psychology, 5(2), 109-133.
- Butler, R. (1975). Why survive? Being old in America. New York: Harper and Row.
- Butler, R., & Gastel, B. (1979). Aging and cancer management. Part II: Research perspectives. Cancer, 29(6), 333-339.
- Campos, L. (1985). Breast self-examination and the elderly female. Oncology Nursing Forum, 12(5), 89.
- Champion, V. (1984). Instrument development for health belief model constructs. Advances in Nursing Science, 6(3), 73-85.
- Champion, V. (1985). Use of the health belief model in determining frequency of breast self-examination. Research in Nursing and Health, 8, 373-379.

- Cobb, B., Clark, S., & McGuire, C. (1954). Patient responsible delay of treatment of cancer. Cancer, 7, 920-926.
- Cummings, K., Becker, M., & Maile, M. (1980). Bringing the models together: An empirical approach to combining variables used to explain health actions. Journal of Behavioral Medicine, 3(2), 123-145.
- DeWaard, F., Poortman, J., & Collette, B. (1981). Relationship of weight to the promotion of breast cancer after menopause. Nutrition and Cancer, 2, 237-240.
- Dillman, D., Christenson, J., Carpenter, E., & Brooks, R. (1974). Increasing mailed questionnaire response: A four-state comparison. American Sociological Review, 39, 744-756.
- Edwards, V. (1980). Changing breast self-examination behavior. Nursing Research, 29(5), 301-306.
- Ellis, R. (1968). Characteristics of a significant theory. Nursing Research, 17(3), 217-222.
- Feldman, J., Carter, A., Nicastrì, A., & Hosat, S. (1981). Breast self-examination, relationship to stage of breast cancer at diagnosis. Cancer, 47, 2740-2745.
- Fisher, B., & Carbone, P. (1982). Breast cancer. In J. F. Holland & E. T. Frei, Jr. (Eds.), Cancer Medicine. Philadelphia: Lea and Febiger.
- Fisher, E., Redmond, C., & Fisher, B. (1980). Pathologic findings from the National Surgical Adjuvant Breast Project (Protocol No. 4) - VI. Discriminations for five-year treatment failure. Cancer, 46, 908-918.
- Foster, R., Lang, S., Costanza, M., Worden, J., Haines, C., & Yates, J. (1978). Breast self-examination practices and breast cancer stage. New England Journal of Medicine, 299(6), 265-270.
- Foster, R., & Costanza, M. (1984). Breast self-examination practices and breast cancer survival. Cancer, 53 (1999-1005).
- Gallup Organization, Inc. (1974, November). Women's attitudes regarding breast cancer (prepared for the American Cancer Society). New York: Author.

- Gioiella, E., & Bevil, C. (1985). Nursing care of the aging client: Promoting health adaptation. In Nursing the client experiencing acute problems of regulation (pp. 489-493). Norwalk, CT: Appleton-Century-Crofts.
- Greenwald, P., Nasca, P., Lawrence, C., Horton, J., McGarrah, R., Gabriele, T., & Carlton, K. (1978). Estimated effect of breast self-examination among high risk women. New England Journal of Medicine, 299(6), 271-273.
- Greenwald, P., & Cullen, J. (1985). The new emphasis in cancer control. JNCI, 74(3), 543-551.
- Haagensen, C. (1948). Carcinoma of the breast. Journal of the American Medical Association, 138, 195-205.
- Haagensen, C. (1952). Self-examination of the breasts. Journal of the American Medical Association, 149, 356-360.
- Haagensen, C. (1971). Diseases of the breast. Philadelphia: Saunders.
- Hair, J., Anderson, R., Tatham, R., & Grabrowsky, B. (1979). Multivariate data analysis. Tulsa, OK: Petroleum.
- Hall, J. (1979, April). Technique of breast self-examination. Unpublished master's thesis, University of Oklahoma, Oklahoma City.
- Hallal, J. (1982). The relationship of health beliefs, health locus of control, and self-concept to the practice of breast self-examination in adult women. Nursing Research, 31(3), 137-142.
- Hellman, S., Harris, J., Canellos, G., & Fisher, B. (1982). In V. T. DeVita (Ed.), Cancer: Principles and practices of oncology (pp. 6-10). Philadelphia: J. B. Lippincott.
- Hirshfield-Bartek, J. (1982). Health beliefs and their influence on BSE practices in women with breast cancer. Oncology Nursing Forum, 9(3), 77-81.
- Holleb, A. (1981). Purposes and goals of breast self-examination. Israel Journal of Medical Science, 17 (9-10), 839-842.

- Howe, H. (1981). Social factors associated with breast self-examination among high risk women. American Journal of Public Health, 71(3), 251-255.
- Huguley, C., & Brown, R. (1981). The value of breast self-examination. Cancer, 47, 989-995.
- Isaac, S., & Michael, W. (1982). Handbook in research and evaluation. San Diego: Edits.
- Kegeles, S. (1969). A field experimental attempt to change beliefs and behavior of women in an urban ghetto. Journal of Health Social Behavior, 10, 115-124.
- Kegeles, S., & Grady, K. (1982). Behavioral dimensions. In D. Schottenfeld, & J. Fraumeni (Eds.), Cancer epidemiology and prevention (pp. 1049-1062). Philadelphia: W. B. Saunders.
- Keller, R. (1978). Self-examination for breast cancer. Today's Clinician, 5, 77-81.
- 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, 887-893.
- Kelley, P. (1979). Breast self-examination: Who does them and why. Journal of Behavioral Medicine, 2, 31-38.
- Kelsey, J., Fischer, D., & Holford, T. (1981). Exogenous estrogens and other factors in the epidemiology of breast cancer. Journal of the National Cancer Institute, 67, 327-333.
- Kerlinger, F. Foundations of behavioral research (2nd ed.). New York: Holt, Rinehart, and Winston.
- Kohnke, M. (1982). Advocacy, what is it? Nursing and Health Care, 3, 314-318.
- Laughter, D., Kean, T., Drean, K., Esparza, D., Hortobagyi, G., Judkins, A., Levitt, D., Marcus, C., & Silberberg, Y. (1981). The breast self-examination practices of high risk women: Implications for patient education. Patient Counseling and Health Education, 3, 103-107.

- Leavitt, F. (1979). The health belief model and utilization of ambulatory care services. Social Science and Medicine, 18, 105-112.
- Leis, H. (1977). The diagnosis of breast cancer. CA--A Cancer Journal for Clinicians, 27(4), 209-232.
- Leis, H. (1980). Risk factors for breast cancer: An update. Breast, Diseases of the Breast, 6(4), 21-27.
- Levy, S. (1983). The aging cancer patient: behavioral research issues. In R. Yancik (Ed.), Perspectives on prevention and treatment of cancer (pp. 239-249). New York: Raven.
- Lewis, M., & Butler, R. (1972). Why is women's lib ignoring old women? Aging and Human Development, 3, 223-231.
- Lewison, E., Jones, H., Doran, W., Mandel, J., Harrison, C., & Daniels, R. (1954). Breast self-examination, educational and clinical effectiveness of the film. Marilyn Medical Journal, 3, 123-130.
- Lewin, K. (1944). Level of aspiration. In J. Hunt McVee (Ed.), Personality and the Behavior Disorders: A handbook based on experimental and clinical research (pp. 333-378). New York: Ronald Press.
- Linsky, A. (1975). Stimulating responses to mailed questionnaires: A review. Public Opinion Quarterly, 39, 82-101.
- Massey, V. (1986). Perceived susceptibility to breast cancer and practice of breast self-examination. Nursing Research, 35(3), 183-186.
- Maynard, R. (1976). Breast examination and diagnosis: Some legal considerations. Breast, Diseases of the Breast, 2(2), 7-10.
- Mikhail, B. (1981). The health belief model: A review and critical evaluation of the model, research, and practice. Advances in Nursing Science, 4(1),
- Miller, A., Kelly, A., & Choi, N. (1978). A study of diet and breast cancer. American Journal of Epidemiology, 112, 258-268.

- Mueller, C., & Ames, F. (1978). Bilateral carcinoma of the breast: Frequency and mortality. Canadian Journal of Surgery, 21(5), 459-465.
- Nasca, P., & Lawrence, C. (1978). Estimated effect of breast self-examination and routine physician examinations on breast cancer mortality. New England Journal of Medicine, 299(6), 271-273.
- National Cancer Institute. (1980, November). National survey on breast cancer: A measure of progress in public understanding. Washington, DC: U.S. Department of Health and Human Services (NIH Publication No. 81-2306).
- National Survey on Breast Cancer: A measure of progress in public understanding. (1980). Washington, DC: U.S. Government Printing Office (DHHS Publication No. 81-2306).
- Newell, G. (1985). Cancer prevention: Update for physicians, four years later. The Cancer Bulletin, 37(3), 103-106.
- Newell, G. (1977). A case for the support of treatment and prevention research in the control of cancer. Journal of National Cancer Institute, 59(6), 1581-1582.
- Nie, N., Hull, C., Jenkins, J., & Steinbrenner, K. (1975). SPSS. New York: McGraw-Hill.
- Nunnally, J. (1967). Psychometric theory. New York: McGraw-Hill.
- Oberst, M. (1981). Testing approaches to teaching breast self-examination. Cancer Nursing, 6, 246.
- Olenn, M. B. (1981). Motivating BSE. American Journal of Nursing, 81, 1656-1657.
- Paffenberger, R., Kampert, J., & Chang, H. (1980). Characteristics that predict risk of breast cancer before and after the menopause. American Journal of Epidemiology, 112, 258-268.
- Palmore, E. (Ed.). (1984). Handbook on the aged in the U.S. Westport, CT: Greenwood Press.
- Pender, N. (1982). Health promotion in nursing practice. Norwalk, Ct: Appleton-Century-Crofts.

- Pender, N. (1975). A conceptual model for preventive health behavior. Nursing Outlook, 23(6), 385-390.
- Petrakis, N., Ernster, V., & King, M. (1982). Breast. In D. Schottenfeld & J. Fraumeni (Eds.), Cancer epidemiology (pp. 855-870). Philadelphia: W. B. Saunders.
- Polit, D., & Hungler, B. (1983). Nursing research: Principles and methods (2nd ed.). Philadelphia: J. B. Lippincott.
- Pollack, E., & Horn, J. (1980). Trends in cancer incidence and mortality in the United States, 1969-76. Journal of the National Cancer Institute, 64, 1091-1103.
- Riley, M. (1983). Cancer and the life course. In R. Yancik (Ed.), Perspectives on prevention and treatment of cancer in the elderly (pp. 25-33). New York: Raven.
- Rosenstock, I. (1966). Why people use health services. Milbank Memorial Fund Quarterly, 44, 94-127.
- Rosenstock, I., & Kirscht, J. (1974). Practice implications. In M. Becker (Ed.), The health belief model and personal health behavior (pp. 143-146). Thorofare, NJ: Charles B. Slack.
- Rumpler, C. (1986). Breast problems. In J. Griffith-Kenney (Ed.), Contemporary women's health: A nursing advocacy approach. California: Addison-Wesley (pp. 547-587).
- Schlueter, L. (1982). Knowledge and beliefs about breast cancer and breast self-examination among athletic and nonathletic women. Nursing Research, 31(6), 348-352.
- Schechter, M. (1985). Smoking--a breast cancer risk? Medical World News, pp. 14-15. (April 22, 1985).
- Seidman, H. (1977). Screening for breast cancer in younger women. Life expectancy gains and losses. CA--A Cancer Journal for Clinicians, 27(2), 66-87.
- Senie, R., Rosen, P., Lesser, M., & Kinne, D. (1981). Breast self-examination related to the breast cancer stage. American Journal of Public Health, 71, 583-590.

- Siegel, S. (1956). Nonparametric statistics for the behavioral sciences. New York McGraw-Hill.
- Snyder, R. (1983). Detection of breast cancer in the elderly woman. In R. Yancik (Ed.), Perspectives on prevention and treatment of cancer in the elderly (pp. 73-83). New York: Raven.
- Snyder, H., Winower, S., Brody, R., Andrews, M., Roth, D., & Burton, D. (1980). Issues of patient compliance. In S. J. Winawer, D. Schottenfeld, & P. Sherlock (Eds.). Progress in cancer research and therapy. Colorectal cancer: Prevention, epidemiology, and screening (Vol. 13) (pp. 299-310). New York: Raven Press.
- Social Security Administration. (1983). Report of the National Commission on Social Security, 46, 3-28.
- Sorenson, A., Seltser, R., & Sundwall, D. (1983). Primary cancer prevention as an attainable objective for the elderly. In R. Yancik (Ed.), Perspectives on prevention and treatment of cancer in the elderly (pp. 301-311). New York: Raven.
- Special Senate Committee on Aging. (1986). Aging America: Trends and projections 1985-86 ed. (No. 498-116-814/42395). Washington, DC: U.S. Government Printing Office.
- Stillman, M. (1977). Women's health beliefs about breast cancer and breast self-examination. Nursing Research, 26(2), 121-127.
- Stockwell, S. (1985). Race and breast cancer: Survival rates are still lower for blacks than whites. Oncology Times, 7(2), 1-3.
- Strax, P., & Greenwald, P. (1979). Potential and limitations of breast self-examination. The Cancer Bulletin, 31(5), 142-145.
- Strax, P. (1982, November 22). Risk factors rarely predict breast cancer. Medical World News, 23(24), 16.
- Strax, P. (1977). Screening for breast cancer. Clinical Obstetrics and Gynecology, 20(4), 781-801.

- Stromborg, M. (1986). The role of the nurse in early detection of cancer: Population sixty-six years of age and older. Oncology Nursing Forum, 13(3), 66-74.
- Tish, K. M. (1984). Breast cancer: the treatment evaluation. American Journal of Nursing, 9, 1109-1120.
- Treece, E., & Treece, J. (1986). Elements of research in nursing (4th ed.). St. Louis: C. V. Mosby.
- Trotta, P. (1980). Breast self-examination factors influencing compliance. Oncology Nursing Forum, 7, 13-17.
- United States Public Health Service. (1980, Fall). Objectives for the nation. (No. 1-4). Washington, DC: U.S. Government Printing Office, Department of Health and Human Services, Public Health Services.
- United States Department of Health, Education, and Welfare. (1984, April). The breast cancer digest (No. NIH 84-1691). Bethesda, MD: National Cancer Institute.
- Wabrek, A., & Wabrek, C. (1979). Mastectomy: Sexual implications. Primary Care, 3(4), 803-810.
- Walker, L., & Avant, K. (1983). Strategies for theory construction. Norwalk, CT: Appleton-Century-Crofts.
- Waltz, C., & Bausell, R. (1983). Nursing research: Design statistics, and computer analysis, pp. 125-157.
- Waterhouse, J., Muir, C., & Correa, P. (1976). Cancer incidence in five continents (Vol. III). IARC Scientific Publication No. 15. Lyon: International Agency for Research on Cancer.
- Webster, L., Wingo, P., Layde, M., & Ory, H. (1983). Alcohol consumption and risk of breast cancer. The Lancet, pp. 724-726.
- Wilkinson, E. (1980). Occult breast cancer metastases in axillary lymph nodes. (Presentation to the Breast Cancer Task Force Committee, Bethesda, MD).
- Windsor, R., Kronenfield, J., Ory, M., & Kilgo, J. (1980). Method and design issues in evaluation of community health education programs. A case study in breast and cervical cancer. Health Education Quarterly, 7, 203-218.

- Wynder, E., & Rose, D. (1984, April). Diet and breast cancer. Hospital Practice, pp. 73-88.
- Yancik, R. (1983). Frame of reference: Old age as the context for the prevention and treatment of cancer. In R. Yancik (Ed.), Perspectives on prevention and treatment of cancer in the elderly (pp. 5-19). New York: Raven.
- Young, J., Percy, C., & Asire, A. (Eds.). (1981, June). Surveillance, epidemiology, and results: Incidence and mortality data, 1973-77. (NIH Publication No. 81-2330). Washington, D.C.: U.S. Department of Health and Human Services.
- Young, J., & Pollack, E. (1982). The incidence of cancer in the United States. In D. Schottenfeld & J. Fraumeni (Eds.), Cancer epidemiology and prevention (pp. 138-165). New York: Macmillan.

APPENDIX A

Human Subjects Exemption Form

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING

96

PROSPECTUS FOR DISSERTATION

This prospectus proposed by: Roma D. Williams
_____ and entitled:

Breast Self-Examination Practice in Older Women

Has been read and approved by the members of (his/hers) Research
Committee.

This research is (check one):

X Is exempt from Human Subjects Review Committee review
because student is using a questionnaire

_____ Requires Human Subjects Review Committee review
because _____

Research Committee:

Chairperson

Anne L. Anderson

Member

Leggy J. Biero

Member

Margaret T. Beard

Member

Glen Jennings

Member

Harold J. Marshall



The
University of Oklahoma
Oklahoma City Campus - Health Sciences Center

INSTITUTIONAL REVIEW BOARD

M E M O R A N D U M

TO: Roma D. Williams, R.N.C., M.S.
Principal Investigator

FROM: Fletcher B. Taylor, Jr. M.D. *FBT/dk*
Chairman, Institutional Review Board

DATE: June 24, 1986

RE: EXEMPTION 3

Research involving survey or interview procedures except when:

- a. subjects can be identified;
- b. subjects might be placed at risk of criminal or civil liability or damage to financial standing or employability; and
- c. research deals with sensitive aspects of subject's behavior.

FOR: IRB Protocol Entitled: Older Women's Health Beliefs and Knowledge
About Breast Cancer and Breast
Self-Examination.

The above-captioned study falls into the category of EXEMPT according to government guidelines for Institutional Review Boards (I.R.B.) and Board review is not necessary. Therefore, you may proceed with your research.

If any changes to the study should occur which significantly alter its contents, before the first year is finished, please contact the IRB office at 271-2090.

FBT:dlk

APPENDIX B

Agency Permissions

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE Westminster Manor

GRANTS TO Roma D. Williams

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

What variables are predictive of breast self-examination practice in a population of older women?

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: 6/10/86

Joanne E. Tucker
Signature of Agency Personnel

Roma D. Williams
Signature of student

Anne Susman
Signature of Faculty Advisor

- * Fill out & sign three copies to be distributed as follows:
Original - Student: First Copy - Agency; Second copy - TWU College of Nursing.

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE Edmond Nursing Center

GRANTS TO Roma D. Williams

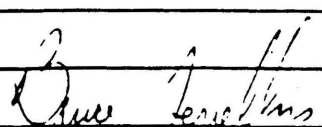
a student enrolled in a program of nursing leading to a Doctoral Degree at Texas Woman's University, the privilege of its facilities in order to study the following problem.

What variables are predictive of breast self-examination practice in a population of older women?

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: 6/5/86


Signature of Agency Personnel


Signature of student


Signature of Faculty Advisor

* Fill out & sign three copies to be distributed as follows:

Original - Student: First Copy - Agency; Second copy - TWU College of Nursing.

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE Oklahoma Christian Home Cottagers

GRANTS TO Roma D. Williams

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

What variables are predictive of breast self-examination practice in a population of older women?

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: 6/9/86

Mary B. Borer
Signature of Agency Personnel

Roma D. Williams
Signature of student

Anne Gudmundsen
Signature of Faculty Advisor

* Fill out & sign three copies to be distributed as follows:

Original - Student: First Copy - Agency; Second copy - TWU College of Nursing.

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING

102

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE Salvation Army Senior Housing Centers * *

GRANTS TO Roma D. Williams

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

What variables are predictive of breast self-examination practice in a population of older women?

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: 6-6-86

Helen Jeffcoat RN
Signature of Agency Personnel

Roma D. Williams
Signature of student

Anne L. Lumsden
Signature of Faculty Advisor

* Fill out & sign three copies to be distributed as follows:
Original - Student: First Copy - Agency; Second copy - TWU College of Nursing.

* * Note: This represents the five (5) federally funded housing centers.

APPENDIX C

Graduate School Permission



Texas Woman's University

P O Box 22479 Denton, Texas 76204 (817) 383-2302 Metro 434-1757 Tex-An 834-2133

THE GRADUATE SCHOOL

June 25, 1986

Ms. Roma Williams
3713 Spring Hill Dr.
Edmond, OK 73013

Dear Ms. Williams:

I have received and approved the Prospectus for your research project. Best wishes to you in the research and writing of your project.

Sincerely yours,

A handwritten signature in cursive script that reads "Leslie M. Thompson".

Leslie M. Thompson
Provost

tr

cc Dr. Anne Gudmundsen

APPENDIX D
Follow-Up Post Card

Dear Resident:

Approximately 1 week ago you received a questionnaire regarding breast cancer and breast self-examination which included a stamped envelope for return. To date, your response has not been received. Your participation in the study is very valuable and I would appreciate your returning it to me as soon as possible.

I would like to again thank you for your assistance in this very worthwhile effort.

Sincerely,

Roma D. Williams, R.N.

APPENDIX E
Cover Letter



DEAR RESIDENT:

The health of older women is a special interest of the American Cancer Society and of this housing center. As a part of our concern, we are conducting a study of women's health care practices in relation to breast self-examination. As a resident of a housing center, you are invited to participate in this study.

As a doctoral nursing student interested in women's health care, I am working with the American Cancer Society in this project. Our purpose in conducting this study is to improve the practice of breast self-examination among women. I am asking you to complete the attached questionnaire and return it in the envelope provided. Instructions are included. Please do not sign your name so that all information gathered from the questionnaire will remain confidential. Completing the questionnaire will take approximately 30 minutes, and I would appreciate you returning it by

If you have additional questions, please contact me at the number below. Your participation will be a great contribution toward helping health care providers understand how we can best assist in this area of health concern.

Sincerely,

A handwritten signature in cursive script that reads "Roma D. Williams".

Roma D. Williams, R.N.
Doctoral Nursing Student
Phone: 271-2302

RDW:bjm

APPENDIX F

Champion Questionnaire and
Permission to Use Instrument

COMPLETION AND RETURN OF THIS QUESTIONNAIRE WILL BE CONSTRUED AS INFORMED CONSENT TO PARTICIPATE IN THIS STUDY.

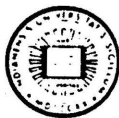
CODE ____

CHAMPION QUESTIONNAIRE

Directions: I am interested in how **YOU** feel about each of the following statements. Check in the column which best represents your feeling of agreement with the statement. Please be sure to answer every item. There are no right or wrong answers.

	STRONGLY AGREE	AGREE	NEUTRAL	DISAGREE	STRONGLY DISAGREE
1. I worry a lot about getting breast cancer.					
2. The thought of breast cancer scares me.					
3. Discovering lumps early would increase my chance of survival if I had breast cancer.					
4. It is embarrassing for me to do monthly breast exams.					
5. Breast cancer would endanger my life.					
6. My physical health makes it more likely that I will get breast cancer.					
7. My feelings about myself would change if I got breast cancer.					
8. When I think about breast cancer, my heart beats faster.					
9. I am too busy to do breast self exam.					
10. I have yearly physical exams in addition to visits related to illness.					
11. I feel that I will get breast cancer in the future.					
12. I am afraid to even think about breast cancer.					
13. Breast self exams can help me to find lumps in my breast.					

	STRONGLY AGREE	AGREE	NEUTRAL	DISAGREE	STRONGLY DISAGREE
14. I am afraid of finding a lump when I do breast self exam.					
15. I search for new information related to my health.					
16. There is a good possibility that I will get breast cancer.					
17. Problems I would experience from breast cancer would last a long time.					
18. I have a lot to gain by doing breast self exam.					
19. I cannot remember to do breast self exam.					
20. I frequently do things to improve my health.					
21. Breast cancer would endanger my marriage (or a significant relationship).					
22. If I had breast cancer, my whole life would change.					
23. I do not think I could find a lump in my breast with breast self exam.					
24. I eat a well-balanced diet.					
25. Breast self exam is something I intend to do.					
26. My chances of getting breast cancer are great.					
27. Doing breast self exam prevents future problems for me.					
28. It is unpleasant for me to touch my breasts.					
29. If I do monthly breast exams, I may find a lump before it is discovered by a nurse or a doctor.					
30. I exercise at least three times a week.					
31. I would not be so anxious about breast cancer if I did breast self exam.					



INDIANA UNIVERSITY

610 Barnhill Drive
Indianapolis, Indiana 46223

SCHOOL OF NURSING

October 17, 1985

Ms. Roma D. Williams
3713 Spring Hill Drive
Edmond, Oklahoma 73034

Dear Ms. Williams:

I just received your letter requesting the instrument used in the ANS article, April 1984. I will enclose this instrument plus the instrument and article used in the second study. You have my permission to use any part of these instruments that are appropriate to your work. My only request is that you provide me with findings of your study upon completion.

Thank you for your interest in my research.

Sincerely,

A handwritten signature in cursive script that reads "Victoria L. Champion".

Victoria L. Champion, R.N., D.N.S.

VLC:sg
enc:instruments
article

APPENDIX G
Demographic Data Sheet

COMPLETION AND RETURN OF THIS QUESTIONNAIRE WILL BE CONSTRUED AS INFORMED CONSENT TO PARTICIPATE IN THIS STUDY.

DEMOGRAPHIC DATA SHEET

DIRECTIONS: I also need to have some information about you. Please check the most appropriate answer or write in your answer.

1. What is your age? _____

2. Are you

- _____ 1. White/Caucasian
- _____ 2. American Indian
- _____ 3. Black
- _____ 4. Hispanic
- _____ 5. Oriental
- _____ 6. Other

3. What is your marital status?

- _____ 1. never married
- _____ 2. married
- _____ 3. widowed
- _____ 4. divorced

4. What is your religious preference?

- _____ 1. Jewish
- _____ 2. Catholic
- _____ 3. Protestant
- _____ 4. Other (name) _____
- _____ 5. No preference

5. What is the highest level of education you have achieved?

- _____ 0. No formal education
- _____ 1. Grades 1-6
- _____ 2. Grades 7-9
- _____ 3. Grades 10-12
- _____ 4. Community/Junior College/Vo. Tech School
- _____ 5. College (1-4 years)
- _____ 6. Graduate or postgraduate (M.A., M.S., Ph.D.)

APPENDIX H

Williams Breast Inventory

COMPLETION AND RETURN OF THIS QUESTIONNAIRE WILL BE CONSTRUED AS INFORMED CONSENT TO PARTICIPATE IN THIS STUDY.

WILLIAMS BREAST INVENTORY

DIRECTIONS: Please read each question and check the most appropriate answer or write in your answer. Please make sure you answer every item.

A. HEALTH HISTORY

1. Have you ever been treated for a benign (non-cancerous) breast disease?
☐ Yes ☐ No ☐ Don't know
2. Have any of your close friends had breast cancer?
☐ Yes ☐ No ☐ Don't know
3. Do you have any type of cancer now or have you had cancer?
☐ Yes ☐ No ☐ Don't know
4. If yes, what type of cancer? _____
5. Has any member of your immediate family had breast cancer?
☐ Yes ☐ No ☐ Don't know
6. If you answered "yes" to question 5, then check all the items that apply.
☐ 1. grandmother - on your mother's side
☐ 2. grandmother - on your father's side
☐ 3. mother
☐ 4. sister or sisters (if more than one, list how many)
☐ 5. cousins, aunts - on your mother's side
☐ 6. cousins, aunts - on your father's side
☐ 7. daughter or daughters (if more than one, list how many)
7. Which of the following health care providers included a breast exam in your last physical?
☐ 1. Doctor
☐ 2. Nurse
☐ 3. No breast exam included
☐ 4. Have not had a physical exam for several years

B. PERSONAL KNOWLEDGE

8. From what THREE major sources have you received most of your information about cancer? (Circle the three that apply)
- | | | |
|---------------|--------------|---|
| 1. Magazine | 5. Family | 9. Nurses |
| 2. Newspapers | 6. Friends | 10. American Cancer Society |
| 3. Television | 7. Pamphlets | 11. Have not heard anything about cancer in the past year |
| 4. Radio | 8. Doctors | |

9. Have you ever been taught Breast Self Examination?
_____ Yes _____ No
10. If you answered yes to number 9, how were you taught? (Check all that apply)
- _____ 1. Read a pamphlet or book
 - _____ 2. Taught by nurse
 - _____ 3. Taught by doctor
 - _____ 4. Shown a film
 - _____ 5. Radio or television
 - _____ 6. Other (name) _____
11. How often do you perform Breast Self Examination?
- _____ More than once a month
 - _____ Every month
 - _____ Every other month
 - _____ 3-4 times a year
 - _____ Once or twice a year
 - _____ I do not currently practice breast self-examination

For the following statements, please circle (T) if the statement is TRUE, or (F) if the statement is FALSE.

12. T F As a woman gets older, the risk of breast cancer increases.
13. T F Most breast lumps are found by a woman's health care provider.
14. T F Visual inspection and palpation (feeling) are important steps in breast self-examination
15. T F A woman's risk of breast cancer decreases after menopause.
16. T F Most breast lumps are not cancerous.
17. T F The area around the nipple is the most common place for breast cancer lumps to be found.

Thank you for completing this questionnaire.

APPENDIX I

Permission to Reprint Health Belief Model (Figure 1)

3713 Spring Hill Drive
Edmond, OK 73013
June 4, 1986

Ms. Jean Hyslop
Permission Editor
J.B. Lippincott Company
E. Washington Square
Philadelphia, PA 19105

Dear Ms. Hyslop:

As a follow-up to our telephone conversation, I am requesting permission to reproduce a figure in my dissertation. The figure (3-1) was published in Medical Care, 1977, 15, 27-46. It is from the Health Belief Model by M. Becker, D. Hoefner, and S. Kasl.

If you have questions, please call me at 405/341-0244. Thank you for your assistance in this matter.

Sincerely,

Roma D. Williams
Roma D. Williams, R.N.C., M.S.

RDW:bjm

PERMISSION GRANTED

Jean Hyslop ... 6/10/86