NURSES' KNOWLEDGE, BELIEFS AND BEHAVIORS ABOUT BREAST CANCER AND BREAST SELF-EXAMINATION

by

Daryl Lieberman Babbitt

A Thesis Submitted to the Faculty of the

COLLEGE OF NURSING

In Partial Fulfillment of the Requirements
For the Degree of

MASTER OF SCIENCE

In the Graduate College

THE UNIVERSITY OF ARIZONA

1979
STATEMENT BY AUTHOR

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SIGNED: Daryl L. Burnett

APPROVAL BY THESIS DIRECTOR

This thesis has been approved on the date shown below:

Lois E. Prosser
Associate Professor of Nursing

Date: 4/30/79
ACKNOWLEDGMENTS

The researcher wishes to express sincere appreciation to her thesis committee members: Ms. Lois E. Prosser, Chairman; Dr. Ada Sue Hinshaw, and Dr. Alice Longman, for their direction and encouragement throughout this study.

The author appreciates the cooperation of the Pima County Health Department, Tucson Visiting Nurse Association, and El Rio Santa Cruz Neighborhood Health Center. Special appreciation is extended to the nurses who agreed to participate in the study, and to John Gaines, Statistician, for his assistance with processing and analysis of the data.

A very special thanks is given to my husband, Gene S. Babbitt, who supported and encouraged me in my efforts during graduate school, and kept my goals in perspective.

Sincere personal gratitude is extended to my mother, Rosella Lieberman, and to my father, Norman Lieberman, who were special consultants during the writing of this thesis, and have been invaluable assistants in all of my accomplishments.
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ABSTRACT

This study asked the following question: What are the knowledge and health beliefs about breast cancer and breast self-examination (BSE), the extent of breast self-examination practiced, and the extent of breast self-examination teaching in a selected group of community health nurses?

The sample included 32 registered nurses who were 22 to 54 years of age and employed in three agencies. They were divided into two groups according to their work setting: ambulatory care or home nursing.

Data were collected using a paper and pencil questionnaire and submitted for computer analysis. Correlation coefficients and significance levels were the major statistics used for analysis.

Analysis of the knowledge scores revealed that subjects knew slightly less about breast cancer than women who had been asked similar questions in a previous study. Subjects felt susceptible to breast cancer and felt BSE was a beneficial technique. Participants practiced BSE more frequently than women in previous studies.

The only significant relationship found in this study was between the clinical setting and BSE teaching. Nurses in ambulatory care taught BSE whenever there was
time, whereas participants working in the home setting only taught BSE when requested by the client.
CHAPTER 1

INTRODUCTION

The American Cancer Society (ACS) (1977) estimated that about 91,000 new cases of breast cancer and 34,000 deaths from the disease were expected in 1978. Of these, it was estimated that there will be 700 new breast cancer cases and 250 deaths due to the disease in Arizona. One of every 14 women is destined to suffer breast cancer at some time during her life (Holleb 1977). Breast cancer is rare in men. In the United States, breast cancer death rates are about 100 times higher for women than men (Levin and Thomas 1977).

There has been no significant change in the mortality rate from breast cancer in many years. However, it is known that discovery and treatment of breast cancer in an early and localized stage offers the best possibility of cure. There is an 84 per cent five-year survival rate when diagnosis and treatment occur before there is any lymph node involvement (American Cancer Society [ACS] 1976). The earlier the detection is made, the better the long-term prognosis (Stillman 1977).

The main methods of achieving early diagnosis are monthly breast self-examination (BSE) performed by women
themselves and periodic clinical examination performed by physicians or nurses. Examination through mammography serves as an additional method of finding early breast cancer, but is not indicated for all age groups. A panel of the National Cancer Institute and National Health Institute (1978) concluded that there is no scientific evidence that mammography is of benefit to women under 50 years of age as a screening tool.

Breast self-examination is a cost-free, simple, and readily available procedure. In spite of this, it appears that many women do not practice this technique with any regularity. In 1974, the Gallup Organization conducted a study of more than 1000 women (American Cancer Society [ACS] 1974). It revealed that although 83 per cent of the women had heard of BSE, three out of every 10 aware women had never practiced it and only 23 per cent of all women surveyed practiced it monthly. A Gallup study in December, 1976 (ACS 1977) reported that 95 per cent of the women surveyed had heard of BSE and 24 per cent practiced it on a monthly basis. Thus, there has been a substantial increase in awareness of BSE, but the number of women practicing BSE regularly remains very low.

The 1974 Gallup survey reported that the lack of regular practice by a majority of women resulted from three factors: ignorance of the importance of monthly self-examination, fear and anxiety, and the lack of knowledge
about and confidence in how to do it. Stillman (1977) suggests that another contributing factor is the general lack of acceptance of preventive medicine. She believes that health professionals have emphasized illness and medical treatment for so long that it is difficult to re-orient the consumer to take steps to keep well.

Community health nursing incorporates a philosophy of preventive health practices. Consistent with this philosophy, nurses have assumed responsibility for patient education on a one to one basis in both ambulatory care and the home setting. Community health nurses (CHN) focus on the prevention of illness and the promotion and maintenance of health. This includes the provision of needed therapeutic services, counseling, advocacy activities, and education. Health teaching is viewed as both a nursing intervention and a nursing responsibility.

CHN's have recently been identified as important resources in teaching about breast cancer and BSE. The American Nurses' Association has endorsed the American Cancer Society's call for registered nurses as special volunteers to help teach BSE in public education programs (Turnbull 1977). However, no study has attempted to assess the readiness and willingness of CHN's to participate in this type of program, or any other type of breast cancer education.
This investigation attempted to assess the knowledge, beliefs, and behaviors of CHN's concerning breast cancer and BSE. Providing clients with information about preventive practices which include such things as self-examination of the breasts is an important aspect of the CHN's teaching task. The significance of teaching clients in the home or clinical setting cannot be overemphasized considering the high incidence of breast cancer in this country and the increased chance of survival with early detection.

**Purpose of the Study**

The purpose of this study was to measure community health nurses' knowledge about breast cancer and breast self-examination. It also identified beliefs about breast cancer and measured the frequency that the nurses practiced BSE and taught BSE to their clients. Comparisons were made with previous studies regarding factual knowledge and practice of BSE (ACS 1974, Stillman 1977, Turnbull 1977).

**Statement of the Problem**

The question that was investigated in this study was the following: What are the community health nurses' knowledge and beliefs about breast cancer and breast self-examination, the extent of their breast self-examination practice, and the extent of breast self-examination teaching in ambulatory care clinics and home visit settings?
Significance

This investigation is relevant to nursing practice and is significant to the nursing profession. Breast cancer affects both the personal lives and professional concerns of the majority of nurses. Most nurses are women and have frequent contact with a broad segment of the female population. Since the emphasis in community health nursing is prevention, BSE should be readily incorporated into a program of preventive nursing care.

Early detection of breast cancer through monthly BSE and periodic examination by a physician has been a recommendation of most studies involving breast cancer screening. If cancer is found in its early clinical stages and has not spread to neighboring glands, a woman's chance of survival is greatly improved. Cancer at this stage can even be curable (Strax 1976).

Strax (1977) stresses that BSE on a monthly basis is very important. He explains that in every screening study involving apparently well women, a small percentage of women will get a clean bill of health and then find a new lump within a year of the examination. Some of these lumps turn out to be small cancers not found in the initial examination. Lesnick (1977) found in his study of 106 women under 45 years of age that breast cancers in these women were frequently palpable before they could be visualized by mammography and xeroradiography.
Studies related to early detection of breast cancer were begun 30 years ago at the Cancer Detection Center at the University of Minnesota. Long term follow-up showed that survival rates for patients who participated in a program of annual physician examinations, supplemented by BSE, have been very favorable. Since the beginning of the study in 1948, 104 out of 8,345 women participating were diagnosed as having breast cancer. Forty per cent of the breast lumps were found during the intervals between physician examinations by the women themselves. Survival rates for women in this study were better than for women usually observed at the Center (Gilbertsen and Kjelsberg 1971). This was the result of periodic follow-up and health preventive practices among participants.

Urban (1976) has found that through public awareness and the use of improved diagnostic aids, more patients are being seen with localized "minimal" breast cancer. The average measured size of the primary tumor seen by Urban has diminished from 3.2 centimeters in 1955 to two centimeters in 1974. There has also been a decrease in the extent and distribution of nodal disease with a marked decrease in apical node involvement.

A recent study by Foster and others (1978) attempted to determine the relationship between BSE performance and the clinical and pathological stage of breast cancer at first diagnosis. The sample consisted of 335 patients on
the breast-cancer registry in Vermont. The researchers found that more frequent performance of BSE was associated with more favorable clinical stage of cancer and fewer axillary lymph node metastases on histologic examination. The age-adjusted maximum tumor diameter of patients practicing BSE monthly was 1.97 centimeters, compared to 2.47 for those performing BSE less often than monthly, and 3.59 for patients never performing BSE. This study did not determine the survival rates for the specific tumor size nor associate BSE frequency with survival rate. However, women who regularly practiced BSE seemed to be seeking medical attention earlier than those practicing less often, possibly improving their chances of survival.

The American Cancer Society and National Cancer Institute have jointly funded 27 Breast Cancer Detection Demonstration Projects across the nation, one of which is located in Tucson, Arizona. The program is demonstrating that mass screening for breast cancer is a feasible community project and the results have been encouraging. The cancers that have been found are confined to the breast in 77 per cent of the women. Outside the projects, in the usual hospital population, only about 45 per cent of breast cancers are found before they have spread to the axillary lymph nodes (ACS 1977).

Although screening projects reach many women who would not ordinarily be examined, participants in one
project in New York tended to come from better educated, higher income groups and younger population segments. Whites were more likely than non-whites to take part, and Jews were more likely than non-Jews (Fink, Shapiro, and Lewison 1968). Kegeles et al. (1965) found that, in general, women from minority groups and those with low levels of educational, occupational, and income achievement are underrepresented in screening programs.

Personal instruction of BSE seems to be the most effective method of teaching and would reach those women not involved in screening projects. Ninety-two per cent of the women surveyed by the Gallup Organization (ACS 1974) who received personal instructions practiced BSE; 33 per cent practiced on a monthly schedule, and 45 per cent less regularly. In contrast, among the aware women in the same survey who had not received any instructions at all, only 43 per cent had ever practiced it, and only 14 per cent had done so monthly.

Since it has been shown that women may be able to improve their chances of surviving breast cancer by early diagnosis through BSE practice and medical examination, a need exists for nurses to take part in educating women about breast cancer and proper techniques of BSE. Nurses have the opportunity to give personal instruction during home visits and clinical examinations to almost all segments of the population. Personal instruction has been found to be the
most effective method of teaching. Nurses are capable and can be a significant force in working to prevent the consequences of a disease that can have important implications for themselves as well as their clients.

**Conceptual Framework**

The conceptual framework used for this study is based on Rosenstock's model of health behavior which emphasizes certain variables that influence a person's decision to take preventive action. These variables include the psychologic state of readiness to take action, the person's perception of his susceptibility and the seriousness of the threat, the convenience of the recommended action, and the amount of effort required on his part (Wu 1973). If a person perceives himself to be susceptible to a disease that is serious in its consequences, he may be motivated to take action (Stillman 1977).

There is a high incidence of breast cancer in this country and all women are susceptible to the disease. However, if negative aspects such as fearfulness, embarrassment, and inconvenience are associated with the preventive action of BSE, then the person may not take the action, even when a state of readiness exists. Women who feel they are susceptible to breast cancer and are aware of the benefits of BSE may be more likely to practice it regularly than women without these perceptions.
Suchman (1967) suggests that another important factor in motivation for action is the person's group influences and social role definitions. If an action is acceptable by the social group, the individual is more likely to follow the recommendation (Wu 1973). Group influence may be a factor that motivates nurses to take preventive action. As students, nurses learn about breast cancer and BSE in physical assessment and physiology classes. Group teaching is the primary method of instruction. Students are encouraged to practice breast examination on themselves and other students in a simulated clinical setting.

Since teaching BSE has been endorsed by the American Nurses' Association (Turnbull 1977), and the practice is accepted by the nursing profession, then, according to Suchman, nurses will be inclined to follow the recommended practice. Whether or not they teach their clients this practice remains to be determined in this study.

The model in Figure 1 represents the framework for this study. The four variables that influence a person's health beliefs and knowledge are (1) state of readiness, (2) perceived susceptibility, (3) convenience of the action, and (4) group influence. All four of these variables, in turn, are influenced by the person's health beliefs and knowledge. Furthermore, the person's health beliefs and knowledge can affect each other. The model proceeds to show that both
Figure 1. Diagrammatic Representation of Health Behavior Conceptual Framework.
health beliefs and knowledge determine whether the person takes preventive action. The preventive action is measured in terms of the practice of BSE and the teaching of BSE.

**Basic Assumptions**

For the purpose of this study the following four general assumptions were made:

1. Knowledge can be measured.
2. Beliefs can be measured.
3. It is desirable to practice BSE.
4. It is important for nurses to teach BSE to clients.

**Definition of Terms**

The first five definitions in this study were taken directly from Stillman's (1977) study of women's health beliefs and attitudes. The last two definitions were designed specifically for this study and are based on the review of literature.

1. Health beliefs—a set of perceptions an individual holds about her susceptibility to a disease, the seriousness of that disease on her life, and the benefits of taking an action to reduce the threat of the disease.
2. Perceived susceptibility—the subjective risk of acquiring a disease such as breast cancer.
3. Perceived benefits—the subjective effectiveness of a preventive action such as BSE in reducing the threat of breast cancer.

4. Breast self-examination (BSE)—the examination of both breasts, or one if one has been removed, by a woman in a systematic manner for the purpose of detecting an abnormality.

5. Knowledge—factual material possessed by the respondent in regard to breast cancer and BSE.

6. BSE teaching—the instruction to a female client in observing her breasts in a sitting or standing position in front of a mirror, and palpating her breasts in a lying position on a monthly basis.

7. Community Health Nurses—Registered Nurses and Nurse Practitioners working in ambulatory adult clinics and/or home settings.

8. American Cancer Society (ACS)—national organization for the purpose of research and education in the area of cancer.
CHAPTER 2

SELECTED REVIEW OF THE LITERATURE

Most of the literature on breast cancer and BSE relates to the incidence and treatment of the disease. The incidence of breast cancer was discussed in the introduction (ACS 1977, Holleb 1977, Levin and Thomas 1977). The treatment of breast cancer is not relevant to the question under investigation. The importance of teaching BSE to clients and monthly BSE practice was discussed as part of the significance of the study.

There is a limited amount of information available on women's knowledge, beliefs, and behavior regarding breast cancer and BSE. The Gallup Survey (ACS 1974) and Stillman's (1977) study both reported women's knowledge, attitudes, and practice of BSE. Thiessen (1971) and Turnbull (1977) reported the extent of BSE practice among participants in their studies. The only study reported in the literature that is concerned with the extent of BSE practice among nurses is Turnbull's (1977) investigation.

**Knowledge About Breast Cancer**

Included in the Gallup Organization's national survey of 1000 women 18 years of age and older (ACS 1974) were questions about breast cancer. The results revealed
widespread ignorance and confusion as to the causes of breast cancer. A majority of women, 62 per cent, incorrectly believed that a blow or injury to the breast could cause breast cancer. Women also overestimated the prevalence of breast cancer and incorrectly believed that most lumps are malignant. Only 41 per cent realized that if someone else in the family has had breast cancer, this increases a woman's chances of acquiring the disease. Forty per cent did not know that with increasing age, there is an increased chance of developing breast cancer.

Stillman's (1977) investigation of 122 women also found that most women overestimated the prevalence of breast cancer. However, in contrast to the Gallup Survey, 96 per cent correctly believed that most breast lumps are not malignant.

Beliefs About Breast Cancer and BSE

Many women surveyed in the Gallup study (ACS 1974) expressed fear and pessimism regarding self-examination. Forty-six per cent of the women said that they felt practicing monthly BSE would cause them unnecessary worry.

Stillman (1977) attempted to measure women's beliefs regarding susceptibility to breast cancer and benefits of BSE. In contrast to the women surveyed in the Gallup study (ACS 1974), 97 per cent of Stillman's sample regarded BSE as an important and beneficial technique. Eighty-seven per
cent of the sample scored high on the susceptibility scale. This indicated that many women felt susceptible to breast cancer.

The Practice of BSE

Despite the fact that 97 per cent of the sample in Stillman's (1977) study felt BSE was beneficial, slightly less than 40 per cent of the participants practiced BSE regularly on a monthly basis. The reasons for not practicing BSE included never being shown how to do it, too busy, and rather not think about it.

The Gallup Survey in 1974 revealed that although 83 per cent of the women had heard of BSE, three of every 10 aware women had never practiced it and only 23 per cent of all women surveyed practiced it monthly. A Gallup study in December, 1976 (ACS 1977) found there had been an increase in both awareness and practice of BSE. Among those surveyed, 95 per cent of the women had heard of BSE, but only 24 per cent practiced it on a monthly basis.

A study of 150 women conducted at the Breast Disease Clinic at the Preventive Medicine Institute-Strang Clinic in New York was reported by Thiessen (1971). Fifty-six of these women, 37 per cent, claimed regular periodic self-examination. Fourteen of these women described the frequency of examination as daily, weekly, rarely, or occasionally. The extremes in frequency of examination casts some
doubt on the value of examination and its effectiveness for these women. The remainder of the women described their frequency as monthly or bimonthly.

Turnbull (1977) surveyed 90 nurses studying for their master's degrees and 70 women in master's programs outside the health disciplines. Seventy-seven of the nurses and 48 of the women in non-health related programs reported practicing BSE on a monthly or every two to three month basis.

Teaching BSE

According to the Gallup study (ACS 1974), physicians play the single most important role in getting women to practice BSE. A total of 32 per cent of the women surveyed became aware of BSE through a physician either by personal discussion, or a pamphlet in the office. This compares with 17 per cent who first became aware through a magazine article, eight per cent by television, eight per cent by newspapers, and two per cent by radio. There was no report of a nurse being a factor in women's awareness of BSE, although it is not known if this was specifically asked.

Stillman (1977) reported that 87 of 122 women in her study had learned about BSE from a physician. The media or American Cancer Society brochures were sources of information for about one-third of the participants. Only four respondents had learned about BSE from a nurse.
In Turnbull's (1977) investigation the three highest factors that influenced the non-health oriented group of master's students to practice BSE were fear of cancer, mass media publicity, and the guidance of a physician. Fifteen of the 70 women in non-health related programs listed a nurse's influence as a motivating factor for practicing BSE.

Various methods of teaching have been tried in an effort to get women to practice BSE regularly. Lambert (1975) used a film from the American Cancer Society to instruct 23 women at The University of Arizona on facts about breast cancer and methods of BSE. This resulted in a significant increase in knowledge immediately after the film and increased knowledge and performance of BSE three months later.

The American Cancer Society Public Education Department studied the effectiveness of several alternative breast cancer educational programs in 1977 in order to determine which was most effective in persuading women to practice BSE, and to improve women's attitudes toward and knowledge about breast cancer and BSE. The study involved exposing 5,533 women to seven different breast cancer education programs. The programs differed in terms of the content of the program and/or the spokesperson conducting the program. Overall, the educational programs were effective in increasing women's performance of BSE. The incidence of women practicing BSE on a monthly basis more than doubled from 18
to 36 per cent. There were also significant improvements in women's attitudes toward BSE and their sense of confidence in performing BSE. The level of knowledge about breast cancer also increased as a result of the program. Correct answers about the incidence of breast cancer went from 21 to 49 per cent after exposure to the program. The program also helped reduce women's fearfulness about breast cancer. The incidence of women who reported that they were "very fearful" decreased from 35 per cent before the program to 28 per cent after the program (Lieberman Research, Inc. 1977).

Educating the public about BSE and breast cancer has been shown to be beneficial and cause significant improvement in the frequency women practice BSE. Clearly, neither nurses nor physicians are utilizing their potential for teaching clients how to practice BSE. Only 23 per cent of all women have a physician who examines their breasts at every visit. Even among women who see a gynecologist, a minority report that the physician examines their breasts at every visit (ACS 1974). Both the nurse's and physician's roles are quite limited in terms of their potential.

**Summary of Literature Review**

The review of the literature showed that women hold many misconceptions about breast cancer. The lack of knowledge may, in part, contribute to the fearful and pessimistic attitudes expressed by many women regarding the benefit of
monthly BSE. However, even among women who believed BSE was beneficial, the majority did not practice it on a monthly basis. Persons who most regularly practiced BSE were nursing and other students in master's degree programs.

Physicians were reported most frequently as the source of BSE teaching and awareness. The media and American Cancer Society brochures were also reported as important sources of information. There was some evidence that teaching BSE increases the awareness and extent of BSE practice. However, neither physicians nor nurses are taking advantage of their roles as health educators in teaching the public about BSE.
CHAPTER 3

METHODOLOGY

This chapter describes the design of the study, the sample, the development and scoring of the measurement tool, the validity and reliability of the measurement tool, and analysis of the data.

**Design of the Study**

This was a descriptive study designed to: (1) measure community health nurses' knowledge about breast cancer and BSE, (2) identify beliefs about breast cancer which may related to the practice and teaching of BSE, and (3) measure the frequency that community health nurses practice BSE and teach BSE to their clients.

To determine the level of knowledge nurses had about breast cancer and BSE, subjects were asked to answer factual questions about breast cancer and BSE. To determine beliefs about their susceptibility to breast cancer and benefits of BSE, subjects were asked to rate certain statements on an agree-disagree continuum. All of these data were correlated with the frequency of practicing BSE and teaching BSE to clients.

This study was approved by the Human Subjects Committee of The University of Arizona. A letter of
introduction was given to each subject explaining the risks and benefits involved in participating in the study. The letter assured participants that the information they gave would be confidential and that no names would be used. They were told that they were free to refuse to answer any of the questions and that participation in or withdrawal from the study would not affect their work status in any way (see Appendix A).

Permission to conduct the study in the Pima County Health Department, Tucson Visiting Nurse Association, and El Rio Santa Cruz Neighborhood Health Center was obtained from the Director of Nursing at each facility. In each situation, the investigator met with the director at pre-arranged times, explained the purpose of the study and the use of the questionnaire, and obtained verbal permission to carry out the investigation at each facility.

The Sample and the Setting

The subjects for this study were a convenience sample of community health nurses who were: (1) registered to practice nursing in the state of Arizona, (2) willing to participate in the study, and (3) worked in either an ambulatory adult clinic or home nursing settings.

The setting for the study was a southwestern city with a population of approximately 350,000. Three health care institutions were contacted for subjects: (1) Pima
County Health Department, (2) Tucson Visiting Nurse Association (VNA), and (3) the El Rio Santa Cruz Neighborhood Health Center.

Data Collection

Data collection methods varied at each health facility. At the Pima County Health Department, the investigator met with nurses during a weekly meeting of the three substation of the department to explain the purpose of the study and the questionnaire. The nurses completed the questionnaires at that time and questionnaires were collected immediately.

The investigator also met with the nurses at the VNA and distributed the questionnaires. However, the questionnaires were not collected until a week after the initial meeting. At the Neighborhood Health Center, the director of nursing distributed and collected the questionnaires, and the investigator obtained the questionnaires a week after they were distributed.

Development and Scoring of the Measurement Instrument

The instrument used to collect data for this study was a five part questionnaire. It consisted of items used in previous studies on beliefs and practices regarding breast cancer and BSE (Turnbull 1977, Stillman 1977) as well
as questions specifically designed for this study (see Appendix B).

Before answering specific items on the questionnaire, each subject wrote her age and clinical work setting. She was asked to select adult ambulatory care, home setting, or to specify another work setting.

Section I of the questionnaire included nine multiple choice questions related to factual knowledge about cancer of the breast. Content for the questions was based on a literature review. Areas of inquiry included incidence of the disease, risk factors, critical times and positions for BSE, and observations for signs and symptoms of the disease. The answers to these questions are underlined in Appendix B.

Section II included 10 items reflecting women's beliefs about breast cancer and BSE. The items were statements of opinion based on an agree-disagree continuum with four choices: agree strongly, agree a little, disagree a little, disagree strongly. This section was replicated from Stillman's (1977) study with permission from the author.

Section III requested participants to respond to five statements about family and personal history of cancer and breast disease, and self-examination practices. Additional questions asked about teaching or demonstrating BSE to clients in their clinical setting. Choices for each statement ranged from three to seven.
Section IV of the questionnaire was only answered by subjects who practice BSE at least four times a year. Included were six multiple choice answers to statements related to individual practice of BSE. Subjects were asked about the positions in which they practice BSE, their confidence in carrying out a reliable examination, and where they had heard about BSE.

Section V was a special section designed for those participants who perform BSE less than four times a year. Subjects were asked if they have ever heard of BSE, and, if so, where they had heard of it. They were also asked to identify factors that influenced their lack of regular practice. Eight answers were given to choose from or they could write in other reasons explaining their lack of practice. The final question asked that if given the appropriate information and instruction, would they practice BSE regularly. This question was designed to determine if educational opportunities would be beneficial.

The following method was used for scoring responses to the questionnaire:

Responses to the nine questions in Section I were determined to be either correct or incorrect. A response was incorrect when (1) the information given by the subject was in error, (2) the subject answered "have no idea," or (3) the subject gave no response. The lowest possible score
for all nine questions in this section was zero, indicating no knowledge. The highest overall responses score was nine.

In Section II of the questionnaire, the even-numbered statements reflect the subject's perceived susceptibility to breast cancer and the odd-numbered statements reflect the subject's perceived benefits of BSE. Stillman's method of scoring was used to measure beliefs. In every question except 10, the lowest belief received a score of one and the highest belief received a score of four. In Number 10, a response of "above average" received a three and "below average" scored one. Items 1, 4, 5, and 8 were scored four points if the subject chose "agree strongly." Items 2, 3, 6, 7, and 9 scored four points if "disagree strongly" was selected. A total score of 5 to 19 was possible for perceived susceptibility, and a score of 5 to 20 was possible for perceived benefits.

Questions 2 and 6 in Section III of the questionnaire were scored in an attempt to measure behavior. In Question 2, the rate of BSE practice was scored as four points for regularly every month, three points for every two to three months, two points for less than four times a year, and one point for not at all. In Question 6, the frequency of teaching BSE to clients was scored as five points for teaching all clients, four points for teaching all female clients, three points for teaching whenever there was time, two points for only teaching if asked by the
client, and one point if the subject usually did not teach BSE. The mean scores for the subjects were computed for each group according to their work setting, ambulatory care or home visits. The remainder of the questions in Sections III, IV, and V were recorded by the investigator as descriptive data.

**Validity and Reliability**

Questions 1 through 4 in Section I and all of Section II of the questionnaire used in this study were from Stillman's (1977) study. Stillman established content validity for her questionnaire by submitting it to five graduate nursing students and two non-nurse women. They judged the questionnaire for clarity, readability, and understandability. The graduate nurses also evaluated the items on the attitude scale. The nurses agreed 100 per cent that the items in this section measured the variables that were under investigation, perceived susceptibility, and perceived benefits. Stillman's questionnaire was also given to 20 women as a pretest. The pretest revealed that the instrument obtained the data that were sought.

The questionnaire used in this investigation was tested for reliability using the test-retest method. Ten female graduate students in the College of Nursing at The University of Arizona voluntarily completed the questionnaire at two different times. The testing periods were one
week apart. Consent for this pilot study was obtained from the College of Nursing Review Committee and each individual.

The percentage of agreement between answers given at each testing period was calculated for each section of the questionnaire. The correlation coefficient was computed for Section II (see Appendix C).

The per cent of agreement between answers of the two questionnaires completed by each participant was calculated for each item as well as each section. There was at least 70 per cent agreement for all sections except Section V. In this section there was 60 per cent agreement. However, only two individuals completed Section V.

The correlation coefficient was calculated for each item in Section II. Each item had a correlation coefficient of at least .95. The overall coefficient for Section II was .96.

Based on the results of the pretest, minor changes were made in the wording of some of the questions, and the personal information requested at the beginning of the questionnaire was changed.

Analysis of the Data

All data in Sections I and II and Questions 2 and 6 of Section III were coded and submitted to the computer for analysis. The analysis included the frequency distribution, mean, standard deviation, and standard error of measurement.
for each item. The analysis of relationships between the variables utilized correlation coefficients and levels of significance.

For purposes of analysis, subjects were labeled as being in either ambulatory care or home visit work setting. If a subject responded as being in both adult ambulatory care and home visits, she was placed in the category of ambulatory care. This was necessary for statistical correlations.
CHAPTER 4

PRESENTATION AND ANALYSIS OF DATA

This study asked the following question: What are the knowledge and health beliefs about breast cancer and breast self-examination, the extent of breast self-examination practiced, and the extent of breast self-examination teaching in a selected group of community health nurses? This chapter will present the findings and statistical analyses of the data that were collected to answer the question proposed in this study.

Characteristics of the Sample

The findings are based on a sample of 32 subjects who met preselected criteria. They were registered to practice nursing in the state of Arizona, willing to participate in the study, and worked in either an ambulatory adult clinic or home visit setting.

Personal data gathered regarding the sample population included the age of the participant and the clinical work setting. The participants ranged in age from 22 to 54 years with a mean age of 35.5 years. All participants were female.

Table 1 presents the clinical work setting of the sample. Group One included nurses working in either
Table 1. Distribution of Subjects in Three Agencies by Groups

<table>
<thead>
<tr>
<th>Agency</th>
<th>Health Dept.</th>
<th>VNA</th>
<th>El Rio</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group One</td>
<td>5</td>
<td>0</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>(Amb. Care)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group Two</td>
<td>13</td>
<td>7</td>
<td>0</td>
<td>20</td>
</tr>
<tr>
<td>(Home Setting)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>7</td>
<td>7</td>
<td>32</td>
</tr>
</tbody>
</table>

ambulatory care settings or both ambulatory care and home settings. Group Two included nurses working only in a home setting. The table shows the distribution of nurses from the Pima County Health Department, Tucson Visiting Nurse Association, and El Rio Santa Cruz Neighborhood Health Center.

Findings Related to Knowledge About Breast Cancer and BSE

Section I of the questionnaire measured nursing knowledge about breast cancer and BSE. The answers were recorded as correct or incorrect according to criteria determined in the review of literature.
Question 1 of the knowledge portion of the questionnaire asked about the prevalence of breast cancer. Table 2 presents the number and per cent of subjects who correctly identified less than 10 per cent as the answer. Only six subjects (18.7 per cent) were correct while 26 (81.3 per cent) were incorrect.

<table>
<thead>
<tr>
<th>Question</th>
<th>Correct</th>
<th>Incorrect</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Per Cent</td>
<td>Number</td>
</tr>
<tr>
<td>1. Prevalence of Breast Cancer</td>
<td>6</td>
<td>18.7</td>
<td>26</td>
</tr>
<tr>
<td>2. Breast Lumps not Malignant</td>
<td>30</td>
<td>93.7</td>
<td>2</td>
</tr>
<tr>
<td>3. Age Risk Increases</td>
<td>27</td>
<td>85.0</td>
<td>5</td>
</tr>
</tbody>
</table>

Question 2 determined knowledge about lumps discovered in the breast. Table 2 shows that 30 subjects (93.7 per cent) were correct in their belief that most lumps are not malignant. Two subjects (6.3 per cent) were incorrect.

Question 3 asked subjects to determine at what age the risk of developing breast cancer increases. Table 2
illustrates that 27 subjects (85 per cent) correctly believed that the chance of developing breast cancer increases after the age of 40 or 50. Five subjects (15 per cent) were incorrect.

Question 4 required a selection of factors that will increase the risk for developing breast cancer. Table 3 shows the distribution of correct answers for each risk factor selected. Eight subjects (25 per cent) correctly answered this question by selecting all of the correct risk factors, while 24 subjects (75 per cent) did not select all the correct risk factors. Twenty subjects (62 per cent) knew that a woman has a greater risk if she has never had children; 16 subjects (50 per cent) correctly believed that a woman past menopause increased her risk; and 25 subjects (78 per cent) knew that if a relative had breast cancer, the risk was increased. Two subjects (six per cent) incorrectly believed that if a woman had breast fed her children she increased her risk; six subjects (18.7 per cent) were under the misconception that taking birth control pills increased a woman's risk; and two subjects incorrectly thought that a breast injury could increase the risk.

Question 5 tested knowledge about the time of the month that a woman in her child-bearing years should examine her breasts. Table 4 shows that 28 subjects (87.5 per cent) correctly stated that the best time was right
### Table 3. Distribution of Answers Relating to Knowledge of Risk Factors Associated with Breast Cancer

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Number of Subjects</th>
<th>Per Cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Children</td>
<td>20</td>
<td>62.0</td>
</tr>
<tr>
<td>Past Menopause</td>
<td>16</td>
<td>50.0</td>
</tr>
<tr>
<td>Relative with Breast Cancer</td>
<td>25</td>
<td>78.0</td>
</tr>
</tbody>
</table>

Factors Not Proven to be a Risk

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Number of Subjects</th>
<th>Per Cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast-fed Children</td>
<td>2</td>
<td>6.0</td>
</tr>
<tr>
<td>Birth Control Pill</td>
<td>6</td>
<td>18.7</td>
</tr>
<tr>
<td>Breast Injury</td>
<td>2</td>
<td>6.0</td>
</tr>
</tbody>
</table>

Total

| Identification of Correct Risk Factors | 8 | 25.0 |
| Incorrect or Incomplete Identification | 24 | 75.0 |

### Table 4. Number and Per Cent of Subjects Who Correctly Identified the Best Time for a Woman in Her Child-Bearing Years to Practice BSE

<table>
<thead>
<tr>
<th></th>
<th>Correct</th>
<th>Incorrect</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>28</td>
<td>4</td>
<td>32</td>
</tr>
<tr>
<td>Per Cent</td>
<td>87.5</td>
<td>12.5</td>
<td>100.0</td>
</tr>
</tbody>
</table>
after menstruation while four subjects (12.5 per cent) were incorrect.

Question 6 asked when a woman past menopause should examine her breasts. Table 5 shows that 29 subjects (91 per cent) were correct in stating that a woman past menopause can examine her breasts on any date that is easy to remember. Three subjects (nine per cent) were incorrect.

Table 5. Number and Per. Cent of Subjects Who Correctly Stated the Best Time for a Woman Past Menopause to Practice BSE

<table>
<thead>
<tr>
<th></th>
<th>Correct</th>
<th>Incorrect</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>29</td>
<td>3</td>
<td>32</td>
</tr>
<tr>
<td>Per Cent</td>
<td>91.0</td>
<td>9.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Questions 7 and 8 tested knowledge about the proper positions in which to practice BSE. Table 6 shows that 30 subjects (94 per cent) correctly stated that observation of the breast can be done in either the standing or sitting position while two subjects (six per cent) were incorrect. The table also presents data in which 30 subjects (94 per cent) correctly stated that palpation of the breast is best done while lying down. Two subjects (six per cent) did not select the correct response.
Question 9 was designed to determine subject knowledge of what abnormalities to look for during BSE.

Table 7 shows that 19 subjects (60 per cent) correctly identified all of the abnormalities while 13 subjects (40 per cent) did not. Thirty subjects (94 per cent) stated that breasts should be examined for nipple discharge and retraction; 18 subjects (57 per cent) believed that breast size should be observed; 27 subjects (84 per cent) believed thickened tissue was important; 28 subjects (87.5 per cent) looked for dimpling in the skin; and 29 subjects (90.5 per cent) noted the importance of enlarged lymph nodes. All of these observations were correct. One subject (three per
Table 7. Number and Per Cent of Subjects Who Correctly Identified the Abnormalities to Look for During BSE, and the Distribution of Selected Answers -- More than one answer was selected by subjects.

<table>
<thead>
<tr>
<th>Abnormality</th>
<th>Number of Subjects</th>
<th>Per Cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nipple Discharge and Retraction</td>
<td>30</td>
<td>94.0</td>
</tr>
<tr>
<td>Breast Size</td>
<td>18</td>
<td>57.0</td>
</tr>
<tr>
<td>Thickened Breast Tissue</td>
<td>27</td>
<td>84.0</td>
</tr>
<tr>
<td>Dimpling</td>
<td>28</td>
<td>97.5</td>
</tr>
<tr>
<td>Enlarged Lymph Nodes</td>
<td>29</td>
<td>90.5</td>
</tr>
<tr>
<td>Incorrect</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presence of Hair</td>
<td>1</td>
<td>3.0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correct Identification All Abnormalities</td>
<td>19</td>
<td>60.0</td>
</tr>
<tr>
<td>Incomplete or Incorrect Identification</td>
<td>13</td>
<td>40.0</td>
</tr>
</tbody>
</table>

cent) incorrectly believed that the presence of hair was important.

Total knowledge scores for each subject were computed according to the number of correct answers out of the nine questions presented in the knowledge section of the questionnaire. Table 8 illustrates that five subjects (15.5 per cent) answered eight of the nine questions correctly; 15 subjects (47 per cent) answered seven questions correctly; seven subjects (22 per cent) answered six
Table 8. Total Number of Questions Answered Correctly in the Knowledge Section of the Questionnaire

<table>
<thead>
<tr>
<th>Total Score</th>
<th>Number of Subjects</th>
<th>Per Cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nine</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Eight</td>
<td>5</td>
<td>15.5</td>
</tr>
<tr>
<td>Seven</td>
<td>15</td>
<td>47.0</td>
</tr>
<tr>
<td>Six</td>
<td>7</td>
<td>22.0</td>
</tr>
<tr>
<td>Five</td>
<td>4</td>
<td>12.5</td>
</tr>
<tr>
<td>Four</td>
<td>1</td>
<td>3.0</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
<td>100.0</td>
</tr>
</tbody>
</table>

questions correctly; four subjects (12.5 per cent) answered five questions correctly; and one subject (three per cent) answered four questions correctly. No participant answered all nine questions correctly.

Analysis of the scores in the knowledge section revealed that most subjects answered the following questions correctly: questions relating age to the risk of breast cancer, the benign diagnosis of most breast lumps, and techniques of BSE including proper positions and the best time to practice. Lowest scores were in the area of risk factors associated with breast cancer and the prevalence of breast cancer. The average number of questions answered correctly by each subject was 6.6.

Analysis of the data in the knowledge section indicated that the personal variables of age and clinical
setting lacked sufficient variability in this sample to correlate with total knowledge scores. The .01 level of probability was adopted to determine the significance of findings for all tests in this study (see Appendix D). A personal or family history of breast disease or other cancer was also not shown to be a significant factor in subject knowledge about breast cancer and BSE.

Further analysis of the knowledge section revealed a minimal amount of variability in the subjects' responses. With the exception of question 4 which asked for risk factors, and question 9 which required a knowledge of abnormalities, most subjects answered the questions in a similar manner. In question 3 which asked about breast lumps and questions 7 and 8 which asked about positions for practicing BSE, 30 out of 32 subjects answered correctly. In the remaining questions, at least 24 subjects (75 percent) received the same scores.

Findings Related to Beliefs About Breast Cancer and BSE

Section II of the questionnaire asked the participant to respond to nine statements which considered beliefs about susceptibility to breast cancer and the benefits about BSE. The subject was also asked to respond to a statement that compares the subject's susceptibility to breast cancer to other women. The even-numbered statements were designed to reflect perceived susceptibility and the odd-numbered
statements were designed to reflect perceived benefits of BSE.

A summary of the options selected for each belief statement appears in Table 9. The first belief item stated that if more women examined their breasts regularly, there would be fewer deaths from breast cancer. Twenty-eight subjects agreed strongly, two agreed a little, and two disagreed a little.

Table 9. Distribution of Option Selection per Item on Belief Scale

<table>
<thead>
<tr>
<th>Item</th>
<th>Agree Strongly</th>
<th>Agree A Little</th>
<th>Disagree A Little</th>
<th>Disagree Strongly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Benefits</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>28</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>29</td>
</tr>
<tr>
<td>5</td>
<td>31</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>29</td>
</tr>
<tr>
<td>9</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>24</td>
</tr>
<tr>
<td>Perceived Susceptibility</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>29</td>
</tr>
<tr>
<td>4</td>
<td>23</td>
<td>6</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>28</td>
</tr>
<tr>
<td>8</td>
<td>12</td>
<td>14</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>10</td>
<td>22</td>
<td>7</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

(average) (above average) (below average)

Underlined options are those rated as high beliefs.
Item 2 stated that the health of the participant was too good to consider that she might get cancer. Twenty-nine subjects strongly disagreed with this statement and two disagreed a little.

Item 3 stated that finding a breast lump was not important because by the time the lump was discovered, it would be too late anyway. Twenty-nine subjects disagreed strongly with this while one agreed a little and two agreed strongly.

Statement 4 asked the respondent to consider that whenever she has heard about someone getting breast cancer, it has made her realize that she could get it too. Twenty-three subjects strongly agreed while six agreed a little and one disagreed a little.

Item 5 stated that if the subject regularly practiced BSE, she might find a lump sooner than if she only had her physician check her during an examination. Thirty-one subjects agreed strongly with this and one disagreed a little.

Number 6 stated that there were so many things that could happen, it would seem pointless to think about something like breast cancer. Twenty-eight subjects disagreed strongly while two disagreed a little.

Item 7 stated that though BSE was a good idea, it is an embarrassing thing to do. Twenty-nine subjects
disagreed strongly with this statement while two disagreed a little, one agreed a little and one strongly agreed.

Number 8 stated that the older the subject gets, the more she thinks about the possibility of getting breast cancer. Twelve subjects agreed strongly, 14 agreed a little, two disagreed a little, and two disagreed strongly with this statement.

Item 9 stated that practicing BSE would make the subject worry unnecessarily about breast cancer. Twenty-four subjects disagreed strongly with this statement while four disagreed a little and three agreed a little.

Item 10 asked the subject to rate how she perceived her risk of getting breast cancer compared to other women. Twenty-two subjects rated their risk as average while seven stated above average and two subjects rated their risk as below average.

Scoring for the belief items was the following: in every question except number 10, the lowest belief received a score of one and the highest belief received a score of four. In number 10, a response of above average received a three, average scored two, and below average scored one.

As illustrated in Table 10, perceived susceptibility scores ranged from 4 to 19 with a mean score of 16.27 and a standard deviation of 2.96. The majority of the sample population scored between 15 and 19 points. Perceived benefit scores ranged from 13 to 20 with a mean of 19.06
Table 10. Distribution of the Sample According to the Score in Susceptibility Beliefs About Breast Cancer and Benefit Beliefs About BSE

<table>
<thead>
<tr>
<th>Score</th>
<th>Susceptibility Belief</th>
<th>Benefit Belief</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>0</td>
<td>20</td>
</tr>
<tr>
<td>19</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>18</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>17</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>16</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>15</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>14</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
<td>32</td>
</tr>
<tr>
<td>Mean Score</td>
<td>16.27</td>
<td>19.06</td>
</tr>
</tbody>
</table>

and a standard deviation of 1.73. Most of the sample scored between 17 and 20 on the benefit items. The greater number of points indicated a higher susceptibility and/or higher benefit belief.

Analysis of the scores on the susceptibility and benefit beliefs showed that most subjects felt they were susceptible to developing breast cancer and that BSE was a useful and beneficial technique in early detection of breast cancer. There was little variation among the answers selected by this sample. Item 8, which stated that the older the subject gets, the more she thinks about the possibility of getting breast cancer, provoked the greatest
variation along the agree-disagree continuum. However, even in this statement, most subjects chose the two highest answers on the belief scale.

No significant relationship was found between beliefs and the personal variables of age, clinical setting, and history of breast disease. There was also no significant relationship between knowledge and beliefs.

Findings Related to Practice of BSE

Section III of the questionnaire began by asking the subject how often she receives a breast examination by a nurse or physician during a physical examination. All except two of the subjects reported having a breast examination at every visit.

The rate of BSE practice by the subjects themselves was scored as four points for regularly every month, three points for every two to three months, two points for less than four times a year, and one point for not at all. Ten individuals rated their practice as regularly every month, 16 practiced every two to three months, five practiced less than four times a year, and one participant did not practice BSE at all. Table 11 illustrates these findings. The range of scores was from one to four with a mean overall rate of practice of 3.12. This rate of practice is equivalent to approximately every two to three months.
Table 11. Distribution of Subjects According to Rate of BSE Practice

<table>
<thead>
<tr>
<th>Rate</th>
<th>Number of Subjects</th>
<th>Per Cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Every Month</td>
<td>10</td>
<td>31.0</td>
</tr>
<tr>
<td>Every 2-3 Months</td>
<td>16</td>
<td>50.0</td>
</tr>
<tr>
<td>Less Than 4 Times a Year</td>
<td>5</td>
<td>15.6</td>
</tr>
<tr>
<td>Not At All</td>
<td>1</td>
<td>3.4</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Seventeen subjects (65 per cent) of those who practiced BSE every month or every two to three months practiced the examination correctly in both the sitting or standing and lying positions. Five individuals in this group (19 per cent) practiced only sitting or standing, and four subjects (16 per cent) practiced lying down only.

Table 12 shows that 12 subjects (44 per cent) in the group practicing BSE every month or every two to three months felt they could carry out a reliable examination all of the time, 13 subjects (52 per cent) most of the time, and one subject (three per cent) stated occasionally. Twenty-four subjects in this group (92 per cent) had confidence that they practiced BSE correctly and two subjects (six per cent) were not sure. Twenty-two participants (85 per cent) in this group were sure that if there was
Table 12. Confidence Level of Subjects who Practiced BSE at Least Every Two to Three Months

<table>
<thead>
<tr>
<th>BSE Practice</th>
<th>Everytime</th>
<th>Most of the Time</th>
<th>Occasionally</th>
<th>Not Sure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliable Exam</td>
<td>12 44</td>
<td>13 52</td>
<td>1 3</td>
<td>0</td>
</tr>
<tr>
<td>Practice Correctly</td>
<td>24 92</td>
<td>0</td>
<td>0</td>
<td>2 6</td>
</tr>
<tr>
<td>Can Find Something Wrong</td>
<td>22 85</td>
<td>0</td>
<td>0</td>
<td>4 15</td>
</tr>
</tbody>
</table>

something wrong they could find it, and four subjects (15 per cent) were not sure.

Five subjects (15.6 per cent) reported practicing BSE less than four times a year and one subject (three per cent) did not practice BSE at all. Table 13 shows that the most frequent reason for not practicing BSE more often was that the individual forgot. Other reasons were that they were too busy and that they would rather not think about breast cancer. There were no affirmative answers to the question that if the individual were shown the proper way to practice BSE, would she practice on a regular basis.
Table 13. Most Frequent Reasons for Practicing BSE Less than Four Times a Year and Not at All

<table>
<thead>
<tr>
<th>Reason</th>
<th>Number of Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forget to Practice</td>
<td>4</td>
</tr>
<tr>
<td>Too Busy</td>
<td>1</td>
</tr>
<tr>
<td>Rather not Think About Cancer</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
</tr>
</tbody>
</table>

Participants were asked to state where they had learned about BSE. Table 14 shows that 22 subjects (68.7 per cent) learned BSE from their undergraduate or graduate education, 16 subjects (50 per cent) learned from an American Cancer Society (ACS) pamphlet, and 15 subjects (47 per cent) learned from a physician. Thirteen subjects (40.6 per cent) learned BSE from a nurse, 10 subjects (31 per cent) learned from a magazine, eight subjects (25 per cent) from television or radio, and four subjects (12.5 per cent) learned from a friend or relative. Most subjects responded to this question by identifying more than one learning source.

Analysis of the data concerning the practice of BSE indicates that the majority of the sample practiced BSE at least every two to three months and were confident in their
Table 14. Reported Sources of BSE Education for All Subjects — N = 30.

<table>
<thead>
<tr>
<th>Source of Information</th>
<th>Number of Subjects</th>
<th>Per Cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>College Education</td>
<td>22</td>
<td>68.7</td>
</tr>
<tr>
<td>ACS Pamphlet</td>
<td>16</td>
<td>50.0</td>
</tr>
<tr>
<td>Physician</td>
<td>15</td>
<td>47.0</td>
</tr>
<tr>
<td>Nurse</td>
<td>13</td>
<td>40.6</td>
</tr>
<tr>
<td>Magazine</td>
<td>10</td>
<td>31.0</td>
</tr>
<tr>
<td>TV or Radio</td>
<td>8</td>
<td>25.0</td>
</tr>
<tr>
<td>Friend or Relative</td>
<td>4</td>
<td>12.5</td>
</tr>
</tbody>
</table>

They tended to practice BSE in both the sitting or standing and lying positions, implying a correct and thorough examination. Most subjects reported learning how to perform BSE from their college education. More subjects reported learning BSE from a physician or American Cancer Society Pamphlet than from a nurse.

No significant relationship was found between the frequency of practice of BSE and the variables under investigation: age, clinical setting, history of breast disease, knowledge, and beliefs.
Findings Related to Teaching BSE

The scoring for teaching BSE to clients was five points for teaching all clients, four points for teaching all female clients, three points for teaching whenever there was time, two points for teaching only when asked by the client, and one point if the subject did not usually teach BSE. Table 15 shows the distribution of responses according to the clinical setting of the subjects. The range of scores for the entire sample was one to five points with a mean score of 2.2. This mean indicated that the average subject taught BSE only if asked to by the client.

In Group One, the ambulatory care group, one subject taught BSE to all clients, six taught BSE to all female clients, three taught whenever there was time, and two did not usually teach BSE. There were 12 subjects in this group with a total score of 40 points. The mean score in Group One was 3.3, indicating that the average individual in this group taught BSE to clients whenever there was time.

Group Two consisted of nurses who primarily made home visits. In this group, one subject taught BSE to all female clients, two taught whenever there was time, three taught only when asked, and 14 did not usually teach BSE to clients. There were 20 subjects in this group with a total score of 30 points. The mean score was 1.5, indicating that
Table 15. Number of Subjects Teaching BSE to Clients According to Clinical Setting and Frequency of Teaching

<table>
<thead>
<tr>
<th>Clinical Setting</th>
<th>Teaching Frequency</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Total</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All Clients</td>
<td>Female Clients</td>
<td>When Time</td>
<td>When Asked</td>
<td>Not Usually</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group One (Ambulatory Care)</td>
<td>1</td>
<td>6</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>12</td>
<td>3.3</td>
</tr>
<tr>
<td>Group Two (Home Visits)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>14</td>
<td>20</td>
<td>1.5</td>
</tr>
<tr>
<td>Total</td>
<td>1</td>
<td>7</td>
<td>5</td>
<td>3</td>
<td>16</td>
<td>32</td>
<td>2.2</td>
</tr>
</tbody>
</table>
the average individual in this group either taught BSE only when requested to by the client, or did not usually teach BSE to clients.

Table 16 presents the reasons reported by subjects for not teaching BSE to clients. Four individuals stated that BSE teaching was not the reason for client home visits and four others stated that there was not enough time to teach. Three subjects stated that most clients were not interested in learning, two individuals reported that they forget to teach, two never thought about teaching BSE, two were not sure how to teach it, and two stated that it was not in their area of nursing.

Table 16. Reported Explanations for Not Teaching BSE to Clients and the Frequency They Were Reported

<table>
<thead>
<tr>
<th>Explanation</th>
<th>Number of Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Primary Reason for Client Visit</td>
<td>4</td>
</tr>
<tr>
<td>Not Enough Time</td>
<td>4</td>
</tr>
<tr>
<td>Most Not Interested in Learning</td>
<td>3</td>
</tr>
<tr>
<td>Forget to Teach</td>
<td>2</td>
</tr>
<tr>
<td>Never Thought About Teaching It</td>
<td>2</td>
</tr>
<tr>
<td>Not Sure How to Teach It</td>
<td>2</td>
</tr>
<tr>
<td>Not In My Area of Nursing</td>
<td>2</td>
</tr>
</tbody>
</table>
Analysis of the data indicated a significant relationship existed between clinical setting and the frequency of BSE teaching. The correlation coefficient for this relationship was -0.73 and the level of significance was .001. Nurses in Group One, the ambulatory care group, taught BSE at a significantly greater rate than nurses in Group Two, the home setting group.

There was no significant relationship found between teaching BSE and the age of the client, a history of breast disease, knowledge, beliefs, and the practice of BSE. While the majority of the sample (81 per cent) practiced BSE regularly every month or every two to three months, only 25 per cent of this group taught BSE to all female clients.

**Summary of Findings**

The findings of this study were presented in the following areas: characteristics of the sample, knowledge about breast cancer and BSE, beliefs about breast cancer and BSE, the practice of BSE, and the teaching of BSE. The sample was divided into two groups according to work setting. Group One consisted of nurses working in ambulatory care and Group Two consisted of nurses working in home settings.

In the knowledge portion of the questionnaire, subjects scored highest in questions relating to techniques
of BSE including the best time to practice and positions in which to practice. Low scores were in the areas of the prevalence of breast cancer and risk factors for breast cancer.

Scores representing beliefs about susceptibility to breast cancer and benefits of BSE were high. This indicated that most participants felt susceptible to breast cancer and felt that BSE was a useful technique.

The majority of the sample, 81 per cent, reported practicing BSE every month or every two to three months. The most frequently given reason for practicing BSE less often was that subjects forgot to practice.

While most subjects practiced BSE, 50 per cent did not usually teach BSE to their clients. The most frequently given reasons for not teaching were that there was not enough time and that teaching BSE was not the reason for the client visit.

The participants reported learning BSE from undergraduate or graduate education, American Cancer Society Pamphlets, and physicians more often than learning from a nurse. All subjects except two received a breast examination from a physician or nurse during a physical examination.

Using a significance level of .01, the data showed no significant relationship between age, clinical setting, history of breast disease, knowledge, beliefs, and the practice of BSE. There was no significant relationship
between teaching BSE and practicing BSE. There was a significant relationship between clinical setting and teaching BSE to clients. The level of significance for this relationship was .001 (see Appendix D). The data revealed that the average individual in Group One, ambulatory care, taught BSE whenever there was time; whereas in Group Two, home nursing setting, BSE was taught only if requested by the client, or was usually not taught.
CHAPTER 5

DISCUSSION OF FINDINGS

The purpose of this study was to measure community health nurses' knowledge about breast cancer and BSE, to identify personal factors and beliefs which may influence the practice and teaching of BSE, and to measure the frequency that the nurses practice BSE and teach BSE to their clients. This chapter will discuss the findings of the study and relate the findings to the conceptual framework used in this investigation.

Characteristics of the Sample

The sample population for this study consisted of 32 nurses practicing in the home setting or ambulatory care. Subjects were either employed with the Pima County Health Department, Tucson Visiting Nurse Association, or El Rio Santa Cruz Neighborhood Health Center. The average age of the sample was 35.5 years. Twelve participants (37.5 per cent) were involved in adult ambulatory care settings and 20 participants (62.5 per cent) worked in home visit settings only. The clinical setting of the participant will become important in further discussions of the outcome of the study.
Knowledge

Twenty-six subjects (81 per cent) overestimated the prevalence of breast cancer. This was consistent with the findings of two previous studies which tested the knowledge of women in the general population. In Stillman's (1977) study, 88 per cent of the sample, and in the Gallup survey (ACS 1974), 92 per cent overestimated the prevalence of breast cancer.

The majority of subjects (88 per cent) correctly understood that most breast lumps are not malignant. Ninety-six per cent of the women in Stillman's (1977) study and 52 per cent in the Gallup survey (ACS 1974) also responded correctly to the question.

Twenty-seven subjects (85 per cent) of the nurses in this study correctly believed that the chances of developing breast cancer increased after the ages of 40 or 50, both of which were acceptable answers according to the American Cancer Society (1977). In Stillman's (1977) study, 92 per cent of the sample stated that a woman's risk increased after the age of 30 or 40 which were acceptable answers in her study.

One area of misconception was the belief that birth control pills increased a woman's risk of breast cancer. Six subjects (18 per cent) in this study believed this was true while 22 per cent of Stillman's sample and 43 per cent of the Gallup sample agreed. This has not yet been proven
in the scientific literature. The nurses in this study seem to be slightly better informed of this than the general population. This would be expected since nurses are usually kept informed of scientific facts through publications and conferences more than the general population.

Nurses were also better informed regarding the consequences of an injury to the breast. Sixty-two per cent of the Gallup survey (ACS 1974) believed that an injury increased a woman's chances of developing breast cancer. Only two of the nurses in this study (six per cent) believed this was true.

The subjects scored high on questions concerning the techniques of BSE and the best time of the month to practice. Since the majority of the sample reported a rate of practice of at least every two to three months, it is important to note that they knew the proper technique. It is encouraging that most of the sample were confident in their technique and knew the abnormalities to look for while practicing BSE.

Comparisons between this study and Stillman's (1977) study of women in the general population showed some variation as to the quality of answers. In spite of their medical education, the nurses seemed to be slightly less informed about the malignancy of breast lumps and the age that the risk of breast cancer increases than the women surveyed by Stillman. The subject's age or clinical
setting in this study had no significant influence on the amount of knowledge about breast cancer or BSE. Both this sample and Stillman's sample gave more correct answers than the women in the Gallup survey (ACS 1974). However, this study revealed that many community health nurses are not aware of some basic facts regarding breast cancer. This finding is important since the nurses in community health nursing are often, through home and clinic visits, the health professionals who have the most frequent contact with patients and are resources in preventive health care teaching.

Beliefs

The scores representing beliefs were very high, indicating that most of the nurses in this sample felt susceptible to breast cancer and felt that BSE is a useful technique in the detection of breast cancer. However, one cannot state that beliefs cause behavior in this situation. If the ideal behavior is considered to be monthly BSE practice, only 10 individuals (31 per cent) practiced every month despite the high belief scores. In addition, half of the sample practiced BSE every two to three months, but there was no consistent pattern that could relate this rate of practice with susceptibility and benefit belief scores.

Item 10 in the belief section asked the individual to rate her chances of getting breast cancer compared to
other women. Seven women felt their chances were above average while two felt their chances were below average. Despite these reports of above and below average susceptibility, the rate of BSE practice among these seven women varied. There was no correlation between susceptibility belief and the rate of BSE practice.

Six of the nurses in the sample were 50 years and older, and were considered to be at higher risk than younger women (ACS 1977). However, only two of the women in this age group labeled themselves as above average in susceptibility, and only one of these two women practiced BSE every month. The other individual did not practice BSE at all.

**Practice of BSE**

The rate of practice of BSE among the nurses in this study was higher than in previous studies cited in the literature. Stillman's (1977) study had a mean rate of practice of 2.64, or between a low and moderate rate of practice. The mean rate of practice in this investigation was 3.21. Eighteen per cent of the women in the Gallup survey (ACS 1974) practiced BSE monthly, whereas 31 per cent of the sample in this study practiced monthly.

The higher rate of practice in this study could be due to the fact that the subjects were nurses. In Turnbull's (1977) study, 85 per cent of the nurses surveyed reported practicing BSE monthly or every two or three
months. In contrast, 68 per cent of the non-nursing master's students in Turnbull's study reported practicing BSE monthly or every two to three months. In this investigation, 81 per cent of the sample reported practicing BSE at this rate.

Nurses have an opportunity to learn BSE through nursing education as well as the work situation. Most nurses in this study reported learning BSE from undergraduate or graduate education. In addition, nurses work with individuals in various disease or health conditions and have an opportunity to learn about health care more often than women in other professions. This exposure and the nursing philosophy discussed in the introduction could explain the preventive orientation toward health which is demonstrated in the high rate of BSE practice.

None of the subjects practicing BSE less than four times a year stated that if she were shown the proper method of practice she would perform BSE regularly. These individuals may have felt that they had enough information about BSE and chose not to practice. It is questionable whether a continuing education program stressing techniques of BSE would be worthwhile. However, one emphasizing the benefits of BSE and factual knowledge about breast cancer may help some individuals realize the importance of BSE practice and teaching.
Teaching BSE

This study has shown that, in general, nurses do not routinely teach BSE to their clients in the community. Ambulatory care nurses and nurse practitioners do significantly more BSE teaching than nurses who primarily make home visits. Several explanations for this were proposed by nurses in home settings. Nurses making home visits stated that the reason for the home visit was usually not to teach BSE and the opportunity to teach was not available. These nurses also stated that the client was not interested in learning BSE and that often there was not enough time to teach.

The lack of BSE teaching by nurses was revealed in Stillman's (1977) study. Only four respondents had learned BSE from a nurse while 87 had learned from a physician and 40 subjects had learned from the media or ACS pamphlets. Even in this investigation, more nurses reported learning BSE from a physician or ACS brochures than from a nurse.

It is discouraging that nurses participating in this study who work in home settings do not usually teach BSE to their clients. Ambulatory care nurses do teach more often than nurses making home visits because of the nature of the client's visit. Ambulatory care nurses can incorporate BSE teaching into the physical examination that is performed on many of the clients. However, in home settings, many nurses visit women who have recently given birth or are
breast feeding their infants. These situations could present an opportunity for the nurse to teach self-care measures such as BSE.

Community health nurses should be encouraged to take advantage of and look for opportunities for preventive health teaching, including BSE. Emphasis should be placed on the low prevalence of breast cancer to decrease fear and anxiety (Stillman 1977). The importance of early detection should be stressed and risk factors should be incorporated into the teaching to make women aware of their susceptibility. Providing basic facts and teaching clients will not only benefit the client, but will contribute to the identification of the community health nurse as both a health provider and educator.

The Health Model

Rosenstock's model of health behavior states that certain variables influence a person's decision to take preventive action. These variables include the person's state of readiness to take action, perception of susceptibility to and seriousness of the disease, and the convenience of the action.

This study attempted to measure each subject's beliefs regarding susceptibility to breast cancer. Convenience of the preventive action was represented by beliefs in the benefits of BSE practice. Knowledge about breast
cancer and BSE was measured as an added dimension to the health model. It was proposed that knowledge also influences a person's readiness to take action. Action was represented as the practice and teaching of BSE.

The theme of the health model is that a high degree of susceptibility and benefit beliefs, and knowledge about the disease will result in the practice and teaching of BSE. This study did not prove that such a relationship exists between beliefs, knowledge, and behavior. Perhaps only random association exists between beliefs, knowledge, and behavior, and other variables such as attitudes toward the body, health, and longevity also affect behavior.

Both the knowledge and belief items did not provide significant variability in subjects' responses. Most subjects answered knowledge items in the same manner, and most subjects scored high on the belief items. The non-significance of the correlation coefficients relating the variables in the study could be due to the lack of variability of responses to the questionnaire. A revised questionnaire with a different belief scale might reveal the relationships between beliefs, knowledge, and behavior that was proposed in the conceptual framework. However, this may be a relationships that cannot be proven, but only argued philosophically.
CHAPTER 6

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

This was a descriptive study designed to measure community health nurses' knowledge about breast cancer and breast self-examination (BSE), identify beliefs about breast cancer and BSE, and measure the frequency that nurses practice BSE and teach BSE to their clients.

The conceptual framework for this study was taken from Rosenstock's theories of health behavior which emphasize certain variables that motivate a person to take preventive action (Wu 1973). Health beliefs and knowledge about breast cancer and BSE were viewed as motivating factors in the decision to take preventive action. These factors interacted with a person's state of readiness, perceived susceptibility, convenience of the action, and group influence. Preventive action was represented as BSE practice and teaching.

The study sample consisted of 32 nurses employed in either the Pima County Health Department, Visiting Nurse Association, or El Rio Santa Cruz Neighborhood Health Center. They were divided into two groups according to their work setting: ambulatory care or home visit setting.
To determine the level of knowledge subjects had regarding breast cancer and BSE, subjects answered a questionnaire with items requesting factual knowledge. The questionnaire also included items about beliefs concerning susceptibility to breast cancer and the benefits of BSE. Participants answered these belief items according to an agree-disagree continuum scale. To ascertain rate of BSE practice and frequency of teaching BSE to clients, subjects were asked in a multiple choice format to measure their rate of BSE practice and teaching.

Correlation coefficients and levels of significance were selected for data analysis. Using a significance level of .01, no significant relationships were found between age, clinical setting, history of breast disease, knowledge, beliefs, and the practice of BSE. There was no significant relationship between teaching BSE and practicing BSE. There was a significant relationship between clinical setting and teaching BSE. The subjects in the ambulatory care group taught BSE significantly more often than subjects who were in home settings.

Analysis of knowledge scores showed subjects knew little more about breast cancer and BSE than non-nursing women who were asked similar knowledge questions in a previous study (Stillman 1977). The subjects practiced BSE more often than non-nursing women, and practiced at the same rate as nurses surveyed in Turnbull's (1977) study.
Subjects most frequently reported learning BSE from undergraduate or graduate education, American Cancer Society pamphlets, and physicians.

Fifty per cent of the sample did not usually teach BSE to their clients. The most frequently given reasons for not teaching were that teaching BSE was not the reason for the client home visits, and that there was not enough time to teach.

Rosenstock's model of health behavior was not supported in this study. No relationship was found between knowledge, beliefs, and behavior using the adopted questionnaire. A revised questionnaire might provide a different perspective of the health model.

Conclusions

The following conclusions have been derived from the data presented in the preceding pages:

1. Nursing knowledge in this study is about the same level as that found in Stillman's (1977) study of non-nursing women who were asked similar questions.
2. Subjects in this study practiced BSE more often than non-nursing women, and at the same rate as nurses studied in Turnbull's (1977) investigation.
3. There were no significant relationships between knowledge, age, personal or family background of
breast disease, susceptibility and benefit beliefs, teaching BSE, or practicing BSE.

4. There was a significant relationship between clinical setting and the frequency of BSE teaching. Nurses working in ambulatory care taught BSE significantly more often than nurses working in home settings.

Recommendations

1. Replication of the study using nurses in different settings such as industrial, high school, and hospital settings to determine the percentage who teach about breast cancer and BSE.

2. Test the validity and reliability of the measurement tool used in this study.

3. Design a study using two of the variables studied in this investigation, knowledge and practice. This would involved relating the extent of knowledge about a certain disease to the preventive measures individuals practice in order to reduce the consequences of the disease.

4. Design a comparative study to determine the extent of preventive practices among nurses and non-nursing professional women who are in the same age group and have the same educational level.
5. Design a study to measure the impact of health teaching by nurses on the consumer.
APPENDIX A

LETTER OF INTRODUCTION

Information for participants:

Nursing knowledge, beliefs and behavior regarding breast cancer and breast self-examination is an important issue in today's health. The literature abounds with information about incidence and prevalence of breast cancer, but little is known about the factual knowledge, beliefs and practices of self-care individuals. Your participation in this study will contribute to nursing education as well as to the accumulation of knowledge about selected women in our society. There are no risks involved.

Participation in this study is voluntary and does not require a signature. If you choose not to participate, your decision will not affect your employment status in any way. Answers will be anonymous and kept confidential. Answers will be used for statistical purposes only. If you complete the questionnaire, it will be assumed that your consent to participate has been given. About twenty minutes of your time will be required.
APPENDIX B

QUESTIONNAIRE

The age and clinical setting of each participant will be used for statistical comparisons. Please provide the following information:

Age

Clinical Setting (you may check more than one):

__ Adult Ambulatory Clinic
__ Home Visits
__ Other setting (please specify)

SECTION I

This section asks general knowledge about breast cancer and breast self-examination. Please read the following statements and circle the letter of the statement that you feel is correct. When indicated, you may select more than one answer.

1. The chances of a woman in this country having breast cancer sometime during her lifetime are:
   a. Under 10 per cent (Less than 10 women out of every 100 will someday have it)
   b. 10-25 per cent (10 to 25 women out of 100 will someday have it)
   c. 26-50 per cent (26 to 50 women out of 100 will someday have it)
   d. 51-75 per cent (51 to 75 women out of 100 will someday have it)
   e. Over 75 per cent (more than 75 women out of 100 will someday have it)
   f. Have no idea

2. Most lumps discovered in the breast turn out to be cancer.
   a. Yes  b. No  c. Have no idea
3. On the average, the chances of a woman developing breast cancer begin to increase after she passes which birthday?
   a. 20th  b. 30th  c. 40th  d. 50th  e. 60th
   f. Have no idea

4. A woman is more likely to develop breast cancer if she:
   (circle as many as you think are correct)
   a. has never had children
   b. has had children
   c. has breastfed her children
   d. has had a hysterectomy before natural menopause
   e. has a blood relative who has had breast cancer
   f. is past menopause
   g. takes birth control pills
   h. has been hit in the breast
   i. have no idea

5. The best time for a woman in her child-bearing years to examine her breasts is:
   a. before menstruation
   b. during menstruation
   c. right after menstruation
   d. anytime

6. The best time for self-examination of the breast during the post-menopausal stage of life is:
   a. the first day of each month
   b. any-date that is easy to remember every month
   c. it is not necessary to practice self-examination after menopause

7. Observation of the breast is best done while:
   a. sitting in front of a mirror
   b. standing in front of a mirror
   c. lying down

8. Palpation of the breast is best done while:
   a. sitting
   b. standing
   c. lying down
9. During palpation and observation, breasts should be examined for: (you may circle more than one answer)

a. nipple discharge and retraction
b. breast size
c. thickened breast tissue
d. dimpling of the skin
e. the presence of hair
f. enlarged lymph nodes
g. have no idea

SECTION II

Each of the following statements represents a judgment about breast cancer and breast self-examination. Please rate each statement by checking the line that is closest to your opinion.

a. agree strongly     c. disagree a little
b. agree a little      d. disagree strongly

1. If more women examined their breasts regularly, there would be fewer deaths from breast cancer.

a.___  b.___  c.___  d.___

2. My health is too good at present to even consider thinking that I might get breast cancer.

a.___  b.___  c.___  d.___

3. Whether I find a lump in my breast myself doesn't really matter because by then it's too late anyway.

a.___  b.___  c.___  d.___

4. Whenever I hear of a friend, relative, or public figure getting breast cancer, it makes me realize that I could get it too.

a.___  b.___  c.___  d.___

5. If I examined my own breasts regularly, I might find a lump sooner than if I just went to the doctor for a check-up.

a.___  b.___  c.___  d.___
6. There are so many things that could happen to me that it's pointless to think about any one thing like breast cancer.
   a. ___  b. ___  c. ___  d. ___

7. Even though it's a good idea, I find examining or having to examine my breasts an embarrassing thing to do.
   a. ___  b. ___  c. ___  d. ___

8. The older I get, the more I think about the possibility of getting breast cancer someday.
   a. ___  b. ___  c. ___  d. ___

9. Examining my breasts often makes me or would often make me worry unnecessarily about breast cancer.
   a. ___  b. ___  c. ___  d. ___

   The following is your rating of how you perceive your risk of getting breast cancer. Circle the letter that describes your perception.

10. If I had to think about the possibility that I might someday get breast cancer, I would rate my chances as compared to other women as:
    a. average
    b. above average (more likely to get it)
    c. below average (less likely to get it)

SECTION III

   These statements deal with family and personal history of cancer and breast disease and the practice and teaching of breast self-examination. It is understood that everyone has different demands, time schedules, and philosophies that influence breast self-examination teaching and practices. Please answer without any hesitation or concern that you are being judged.

1. When I have a physical or gynecological examination the physician or nurse examines my breasts:
   a. at every visit
   b. at every other visit
   c. only if I request that it be done
   d. not at all
2. I examine my own breasts:
   a. regularly every month
   b. every two to three months
   c. less than four times a year
   d. not at all

3. I have a personal history of breast disease.
   a. Yes
   b. No
   c. Not sure

4. A member of my family has a history of breast disease.
   a. Yes
   b. No
   c. Not sure

5. A member of my family has a history of cancer in other body systems.
   a. Yes
   b. No
   c. Not sure

6. I teach or demonstrate the procedure of breast self-examination
   a. to all of my clients
   b. to all of my female clients
   c. whenever I have time
   d. only if asked to by the client
   e. not usually

7. Not everyone teaches breast self-examination to their clients. If you usually do not, please choose one or more of the following reasons for not doing so:
   a. there isn't enough time
   b. I find the procedure embarrassing to talk about
   c. I am not sure how to do it correctly
   d. I have never been shown the technique
   e. most of my clients do not want to learn
   f. the majority of my clients are male
   g. other factors (please state other factors that are not listed)
If you currently practice breast self-examination on a monthly or every two- to three-month basis, please answer Section IV. If you practice breast self-examination less than four times a year, omit Section IV and answer Section V.

SECTION IV

This section deals with your practice of breast self-examination and factors that influenced your practice. Circle the answer that describes your practice of self-examination.

1. I practice breast self-examination in the following position(s): (you may circle more than one)
   a. sitting
   b. standing
   c. lying down

2. I feel I am able to carry out a reliable self-examination:
   a. all of the time
   b. most of the time
   c. occasionally
   d. not usually

3. How confident are you that you are doing your self-examination correctly?
   a. very confident
   b. confident
   c. not too sure
   d. not at all confident

4. If there was something wrong, do you think that you would find it in your examination?
   a. Yes
   b. No
   c. Not sure

5. Where did you hear about breast self-examination? (you may check more than one answer)
   a. friend or relative
   b. doctor
   c. nurse
   d. television or radio
   e. undergraduate/graduate education
   f. magazine
   g. American Cancer Society pamphlet
   h. can't remember
   i. other (please specify)
6. Has anyone ever shown you how to examine your breasts?

   a. Yes (If yes, go back to question 5 and underline that person)
   b. No

SECTION V

According to the literature most women do not practice breast self-examination monthly. If you perform the examination less than four times a year, please answer the questions in this section.

1. Have you ever heard about breast self-examination?

   a. Yes   b. No (Proceed to question 4)

2. Where have you heard about breast self-examination? (you may check more than one)

   a. Friend or relative  f. Magazine
   b. Doctor            g. American Cancer Society pamphlet
   c. Nurse             h. Can't remember
   d. Television or radio
   e. Undergraduate/
      graduate education
   i. Other (please specify)

3. Has anyone ever shown you how to examine your breasts?

   a. Yes (If yes, go back to question 2 and underline that person)
   b. No

4. Why would you say that you don't do breast self-examination? (You may circle more than one answer)

   a. Too busy
   b. Just forget
   c. Rather not think about breast cancer at all
   d. Too embarrassing
   e. Don't like the idea of touching my breasts
   f. Never been shown how
   g. Wouldn't know what to look for
   h. It wouldn't help

5. If you were shown the proper way to do breast self-examination and were given information about it, do you think you would do it on a regular basis?

   a. Yes   b. No   c. Not sure
## APPENDIX C

### PILOT STUDY

Table 17. Per Cent of Agreement and Correlation Coefficients of Sections and Selected Items of the Questionnaire for the Pilot Study

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<th>Per Cent of Agreement</th>
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<td>Section II</td>
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APPENDIX D

CORRELATION COEFFICIENTS, AND SIGNIFICANCE LEVELS
Table 18. Correlation Coefficients (CC) and Significance Levels (SL) of the Variables Tested in This Investigation

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<thead>
<tr>
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<th>Knowledge</th>
<th>Susceptibility Beliefs</th>
<th>Benefit Beliefs</th>
<th>Practice BSE</th>
<th>Teach BSE</th>
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REFERENCES


