

EVALUATING BREAST SELF-EXAMINATIONS IN A MILITARY BENEFICIARY
POPULATION

Kolet Rae Pablo

APPROVED:

Barbara Sylvia, PhD, RN, Committee Chairperson	Date
--	------

Quannetta Edwards, Colonel, USAF, NC, MSN, WHCNP, FNP, Committee CoChairperson	Date
---	------

Patricia McMullen, CRNP, MS, JD, Committee Member	Date
---	------

Diane Seibert, CRNP, Committee Member	Date
---------------------------------------	------

APPROVED:

F.G. Abdellah, Ed.D., ScD., RN, FAAN Dean	
--	--

DISCLAIMER STATEMENT

Department of Defense

This work was supported by the Uniformed Services University of the Health Sciences Protocol No. T06181-02. The opinions or assertions contained herein are the private opinions of the author and are not to be construed as official or reflecting the views of the Department of Defense or the Uniformed Services University of the Health Sciences.

COPYRIGHT STATEMENT

The author hereby certifies that the use of any copyrighted material in the thesis entitled:
EVALUATING BREAST SELF-EXAMINATIONS IN A MILITARY BENEFICIARY
POPULATION

beyond brief excerpts is with the permission of the copyright owner, and will save and hold harmless the Uniformed Services University of the Health Sciences from any damage which may arise from such copyright violations.

ABSTRACT

Despite the recommendations of the American Cancer Society for all women 20 years and older to perform monthly breast self-examinations (BSE), studies have shown that only 30% of females perform BSE. With over two million female military beneficiaries, the importance of assuring BSE is an essential secondary preventive health care practice to ensure a healthy force and a healthy military family. This study was a non-experimental, descriptive study using Ajzen and Fishbein's Theory of Reasoned Action as the theoretical framework to describe the characteristics associated with BSE performance. Using a non-random, voluntary, convenience sample of female military beneficiaries 20 years and older in a regional U.S. Army healthcare system located in the northeastern United States, 110 participants completed the 24-question Breast Self-Examination Questionnaire. Results revealed a high rate of BSE performance and intention to perform BSE. Motivators to perform BSE were early detection, healthy/right thing to do, and personal risk/family history. Most of the women felt that there were no barriers regarding BSE, but a few women noted forgetfulness and lack of time as a barrier. The most significant negative attitude of BSE was the unacceptability that BSE involves thinking about breast cancer. Ninety percent of the women agreed that their healthcare provider and the media recommend BSE performance, and they had the greatest motivation to comply with their healthcare provider's recommendation. The results of this study indicate the need for healthcare providers to recommend BSE to their patients and to explore those variables that influence BSE performance.

Key Words: Ajzen-Fishbein Theory of Reasoned Action; breast neoplasms; breast self-examination; cancer screening; military medicine; military nursing; research, military

EVALUATING BREAST SELF-EXAMINATIONS IN A
MILITARY BENEFICIARY POPULATION

by

KOLET RAE PABLO, CAPTAIN, ARMY NURSE

THESIS

Presented to the Graduate School of Nursing Faculty of
the Uniformed Services University of the Health Sciences

in Partial Fulfillment

of the Requirements

for the Degree of

MASTER OF SCIENCE DEGREE

UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES
May 1999

PREFACE

This research was conducted to provide information on the breast health practices of military beneficiaries. It was designed to assist healthcare providers in promoting breast self-examinations to their patients.

DEDICATION

To my family, I dedicate this thesis. Without their love, support, and assistance, this would not have been possible. To my mother who inspired me throughout her life and continues to motivate me after her death, this research is my thanks and my memorial to her.

TABLE OF CONTENTS

CHAPTER ONE — INTRODUCTION

Background.....	1
Research Problem and Purpose.....	3
Research Questions.....	6
Theoretical Framework.....	6
Definitions.....	9
Assumptions and Limitations.....	10
Summary.....	10

CHAPTER TWO — LITERATURE REVIEW

Motivators

Attitudes.....	13
Subjective Norm.....	13

Barriers

Attitudes.....	14
Subjective Norm.....	15
Theoretical Framework.....	16
Deficits.....	17
Summary.....	17

CHAPTER THREE — METHODOLOGY

Sample.....	18
Measurement Strategies	
Questionnaire.....	19

Validity.....	21
Reliability.....	21
Protection of Human Rights.....	22
Summary.....	22
CHAPTER FOUR — ANALYSIS	
Sample Demographics	
General Demographics.....	24
Healthcare Demographics.....	27
BSE Practices.....	31
Motivators and Barriers.....	32
Attitudes and Subjective Norms	
Attitudes.....	34
Subjective Norms.....	37
Summary.....	39
CHAPTER FIVE — SUMMARY	
Conclusions	
Intent.....	40
Motivators and Barriers.....	42
Attitudes and Subjective Norms.....	43
Recommendations	
Implications for Healthcare Providers.....	44
Future Research.....	45
LIST OF REFERENCES	46

APPENDICES

Appendix A — Tool Permission.....	50
Appendix B — Information Paper	52
Appendix C — Questionnaire	54

LIST OF TABLES

Table 1. General Demographics for Sample Population of Female Military Beneficiaries.....	25
Table 2. Military Demographics for Sample Population of Female Military Beneficiaries.....	26
Table 3. Additional Demographics for Sample Population of Female Military Beneficiaries.....	27
Table 4. Healthcare Demographics for Sample Population of Female Military Beneficiaries.....	28
Table 5. Breast Self-Examination (BSE) Performance and Intention Rates of Female Military Beneficiaries.....	32
Table 6. Reported Motivators to Breast Self-Examination (BSE) Performance of Female Military Beneficiaries.....	33
Table 7. Reported Barriers to Breast Self-Examination (BSE) Performance of Female Military Beneficiaries.....	34
Table 8. Attitudes Affecting Breast Self-Examination (BSE) Performance of Female Military Beneficiaries.....	36
Table 9. Subjective Norms Affecting Breast Self-Examination (BSE) Performance of Female Military Beneficiaries.....	38

LIST OF FIGURES

Figure 1. The Theory of Reasoned Action Applied to Breast Self-Examination.....	7
Figure 2. Valid Percent of Yes Responses for Health Practices over the Past Year.....	29
Figure 3. Valid Percent of Yes Responses for Personal Experience with Breast Disease and Breast Cancer.....	30
Figure 4. Valid Percent of Self-Assessed Risk for Breast Cancer.....	30

CHAPTER ONE - INTRODUCTION

Background

In 1999, it is estimated that 175,000 new cases of breast cancer will occur in women in the United States. In addition to these new cases, 43,300 female deaths from breast cancer are projected (<http://www.cancer.org/statistics/cff99/selectedcancers.html#breast>). Excluding skin cancers, breast cancer is the most common cancer in women and will inflict one in eight women (Parker, Tong, Bolden, & Wingo, 1997). Significant factors in the prognosis of breast cancer cases include when the diagnosis is made and when treatment is started (Craun & Deffenbacher, 1987). Early detection is the key. Studies have shown that the five-year survival rate is less than 76% if the cancer is found in the lymph nodes but is 97% if the cancer is localized (Ries et al., 1997).

No primary preventive activities exist for breast cancer; therefore, secondary preventive measures such as screening must be implemented (Alagna, Morokoff, Bevet, & Reddy, 1987; Fox, Klos, Tsou, & Baum, 1987). Consequently, screening should focus on early detection to decrease morbidity and mortality. Currently, three methods exist for breast cancer screening: breast self-examination (BSE), clinical breast examination (CBE), and mammography (Alagna et al., 1987; Champion & Miller, 1992; Fox et al., 1987; McCool, 1994).

The efficacy of BSE has been debated throughout the literature (Champion & Miller, 1992; McCool, 1994). Some studies have shown no evidence that BSE reduces the mortality rate of breast cancer. Others have shown increased 5-year survival rates in women who reported performing BSE as compared to those who did not (http://www.arc.com/cgi-bin/cancernet.sh?ening_for_breast_cancer_for_Physicians

[#9](#)). Other studies have shown a correlation between BSE performance and early detection of small lesions and increased survival rates (Alagna et al., 1987; Champion & Miller, 1992; McCool, 1994). More research is needed to determine the effect of BSE as a screening tool, but it continues to be supported as a supplement to CBE and mammography (Champion & Miller, 1992). Despite the debate for screening, the American Cancer Society and the National Cancer Institute continue to advocate the use of BSE as an effective means of early detection and improved prognosis (Craun & Deffenbacher, 1987; Fox et al., 1987; Lierman, Kasprzyk, & Benoliel, 1991). The American Cancer Society's guidelines for breast cancer screening include monthly breast self-examinations in all women age 20 and over (Branch, 1998).

For more than thirty years, BSE has been publicized as a method of breast cancer screening (McCool, 1994). Over 90% of women report knowledge of BSE (Craun & Deffenbacher, 1987; Katz, Meyers, & Walls, 1995); however, the reported average of women who perform BSE is only 30% (Champion, 1989; Craun & Deffenbacher, 1987; Katz et al., 1995).

Nursing, particularly nurse practitioners, plays an important role in promoting BSE to women. To effectively teach these behaviors, nursing must study the factors associated with BSE performance (Alagna et al., 1987). To increase the practice of BSE, Craun and Deffenbacher (1987) and Katz et al. (1995) reported a need to understand the gap between knowledge and performance.

Research Problem and Purpose

Over 200,000 women serve on active duty in the U.S. Armed Forces (<http://web1.whs.osd.mil/mmid/military/miltop.htm>). Many physical, psychological, and social demands are placed on this population of women that are not found in any others; however, few research studies have been conducted on the health issues of these women. These women may be exposed to potentially toxic chemicals, endure intense physical activity, use clothing and equipment designed primary for men, can be separated from loved ones, and must integrate into a traditionally male environment (Gunby, 1995). Congress noted that military females should receive special health-related research consideration.

In addition to the active duty military females, two million women are eligible for medical care in military treatment facilities (<http://www.ha.osd.mil/cs/98bcinit1.html>). This additional group of women includes reserve personnel during training, family members/dependents (wives, daughters, mothers), retirees, and many Department of Defense employees. These women also face the demands and challenges asked of every military family. They are often separated from their spouses and must manage all household tasks as well as perform the child rearing as a sole parent. These women experience frequent moves and removal from support systems. With each new move, these women must choose a new healthcare provider and establish care.

The female military beneficiary population ranges in age from the very young to the elderly. Over fifty percent of all new breast cancer cases for 1997 were predicted to be in women between 40 and 69 years of age (<http://www.cancer.org/statistics/>

[97bcff/who.html](#)). The leading cause of cancer death in women between the ages of 15 and 54 is breast cancer (Parker et al., 1997).

The female military beneficiary population is composed of all races and ethnic groups. Breast cancer has shown to affect all racial and ethnic backgrounds; however, significant differences in breast cancer statistics exist between these groups. White women have a higher incidence rate of breast cancer than black women; however, black women have a higher mortality rate than white women (<http://www.cancer.org/statistics/97bcff/who.html>). Black women have a more advanced stage at detection and lower 5-year survival rates for localized, regional, and distant disease (http://www.arc.com/cgi-bin/cancernet.sh?ening_for_breast_cancer_for_Physicians#9).

Many studies have been conducted to help explain this discrepancy in survival rates. Of the differences between African American women and white women, approximately 75 percent is attributable to detection at an advanced stage, aggressive characteristics of the tumor such as estrogen receptor negative, co-morbid conditions such as diabetes, and socioeconomic factors such as lack of access to health care (Eley et al., 1994; Gapstur, Dupuis, Gann, Collila, & Winchester, 1996). Behaviors have played a significant part of early detection among cultural groups, particularly African Americans.

Wojcik, Spinks, and Optenberg (1998) studied 6577 military beneficiaries (5879 whites and 698 African Americans) with equal access to health care. They found that these African American women had improved survival rates over the general population of African American women. Adjusting for all variables, Wojcik and colleagues found a statistically significant difference existed between the mortality of African American

female military beneficiaries and white female military beneficiaries. This difference remains unexplained.

Incidence and mortality rates vary among different Asian/Pacific Islander groups as the subgroups of this population are diverse. For example, Hawaiian women have a breast cancer incidence rate of 105.6 per 100,000, but Korean women have an incidence rate of 28.5 per 100,00. Hawaiian women also have a high mortality rate of 25 per 100,000. Chinese women have a low mortality rate of 11.2 per 100,000. Overall, Asian/Pacific Islander women fall between white women's highest incidence rate of 112.8 per 100,000 and African American women's highest mortality rate of 31.3 per 100,000 (<http://www.cancer.org/statistics/97bcff/who.html>). Military communities are made up of these varied racial-ethnic groups.

A description of the characteristics associated with the performance of monthly BSE in a military beneficiary population merits study as little data is available on the health issues and practices of this large healthcare beneficiary group. Knowledge of the motivators and barriers to performing or not performing monthly BSE will assist healthcare providers in planning care, providing education, and facilitating this health promotion behavior. Additionally, the Public Health Service of the U.S. Department of Health & Human Services has recommended increased primary care provider counseling of patients of cancer screening as one of the Healthy People 2000 objectives (Public Health Service [PHS], 1991).

The purpose of this study was to describe the motivators and barriers to performing BSE in female military beneficiaries of ages 20 and older in an Army regional healthcare system. Using the Theory of Reasoned Action, this research studied

the attitudes and subjective norms that influence intention to perform BSE in the female military beneficiary population. In addition, this study describes the sample population's rate of intention to perform BSE.

Research Questions

The questions addressed in this study included:

In a sample population of female military beneficiaries age 20 and over in an Army regional healthcare system:

- (1) What is the rate of intention to perform BSE?
- (2) What are the motivators to performing monthly BSE?
- (3) What are the barriers to performing monthly BSE?
- (4) What attitudes affect intention to perform BSE?
- (5) What subjective norms affect intention to perform BSE?

Theoretical Framework

The Theory of Reasoned Action proposes that the intention to perform a behavior is often the best predictor that the behavior will occur (Ajzen & Fishbein, 1980). The theory can be used to predict, explain, and influence human behavior (p.10). The conceptual framework of the Theory of Reasoned Action explains the factors of intention in the context of understanding behavior. The person's intention to perform a certain behavior is a function of the person's attitudes toward the behavior and his/her subjective norm (Blue, 1995). The attitude toward the behavior is the product of the person's belief of a consequence of the action multiplied by his/her evaluation of the consequence (Fisher, Fisher, & Rye, 1995). The subjective norm is a product of the person's belief about what significant others (social support) think multiplied by his/her motivation to

comply with others' wishes (Michels, Taplin, Carter, & Kugler, 1995). In other words, one's behavior or intention is a composite of what he/she believes the outcome will be, the importance of the outcome, what others think, and pleasing/conforming to others' desires (see Figure 1).

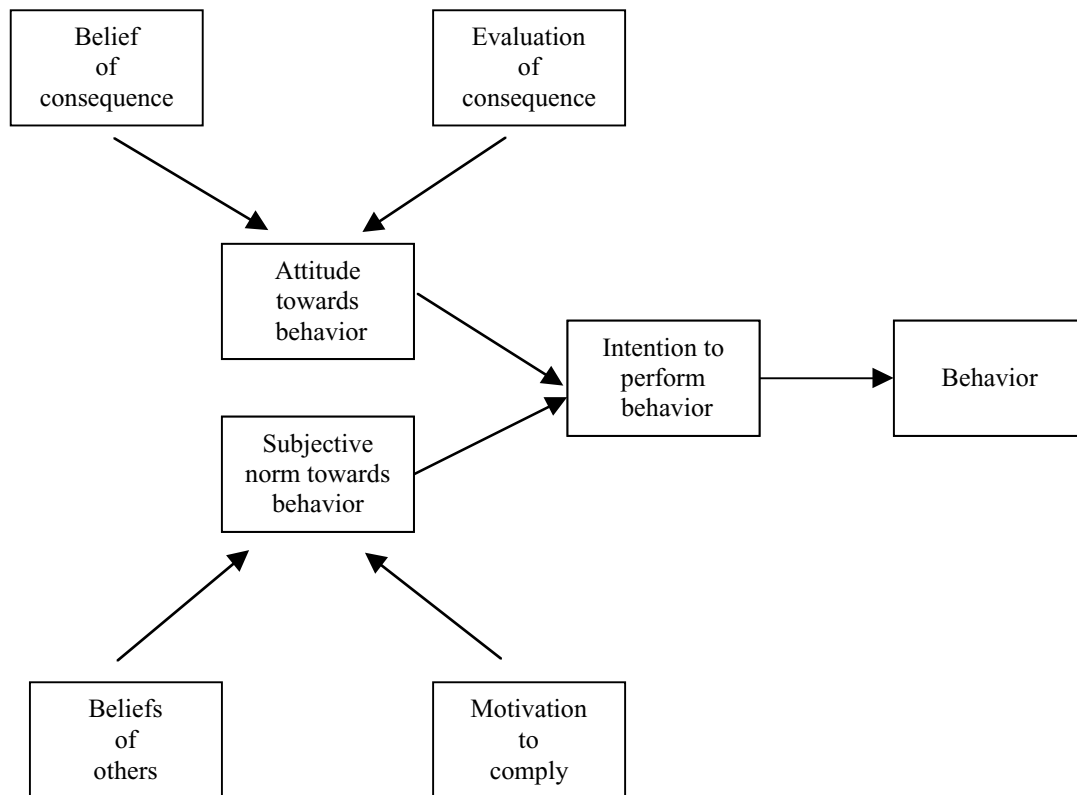


Figure 1.

The Theory of Reasoned Action Applied to Breast Self-Examination (BSE).

Note. From Understanding attitudes and predicting social behaviors (p. 8), by I. Ajzen and M. Fishbein, 1980, Englewood Cliffs, NJ: Prentice-Hall.

Through these concepts and variables, the Theory of Reasoned Action clarifies a common misperception. A person does not perform a behavior because of beliefs about persons, objects, or institutions; or because of demographic or personality characteristics but because of attitudes, subjective norm, and intention (Ajzen & Fishbein, 1980; Blue, 1995). An assumption is made that the behavior is under voluntary control and is an independent choice. On the contrary, a behavior that is not under volitional control cannot be well predicted from intention, as other factors interfere with the positive linear relationship between intention and behavior (Ajzen & Fishbein, 1980). These principles guided this study. Attitudes are influenced by the expectations of outcomes deterred by barriers and promoted by motivators. The subjective norm that directs intention is also affected by motivators and barriers.

Healthcare promotion activities, such as monthly BSE, are under volitional control. In the clinical setting, practitioners can improve the quality and effectiveness of their care if they can predict, and therefore influence, whether or not these exams will be performed by patients.

The Theory of Reasoned Action on a superficial level conforms to common sense (Ajzen & Fishbein, 1980). It provides a simple, yet useful, framework for studies of health promotion behaviors. This theory assisted in identifying the influencing and deterring attitudes and subjective norms of the population who perform and do not perform monthly BSE; thereby, enabling healthcare providers to predict and explain behavior. When these motivators and barriers are known, healthcare providers can better mobilize a health promotion behavior in female military beneficiaries. In addition, this study described the rate of intention to perform BSE in this population in order to

understand the status of female military beneficiaries age 20 and over engaging in this health promotion activity.

Definitions

The variables associated with this study and in the questionnaire were intention, attitudes, subjective norm, motivators, and barriers. The attitudes and subjective norm were conceptually defined in the discussion of the theoretical framework by Ajzen & Fishbein. The motivators and barriers were measured by the Breast Self-Examination Questionnaire modified with permission from Michels and colleagues (1995) (see Appendices A and C). The questionnaire provides the means to operationalize the study.

Breast self-examination. A physical examination of a woman's own breasts as part of breast cancer screening in order to detect changes or abnormalities.

Beneficiary. Any person in possession of a valid Department of Defense identification card annotating medical care eligibility in a military healthcare facility.

Regional healthcare system. The regional healthcare system to be used is the Walter Reed Army Healthcare System based in Washington, D.C.

Provider. A physician, nurse practitioner, or physician's assistant with credentials and training to provide direct patient care in a military hospital or clinical setting.

Intention. The determination to perform monthly breast self-examinations.

Attitudes. Operationally defined in this study as participant's beliefs of whether or not the performance of monthly BSE is a valuable health promotion activity and will lead to identifying breast cancer, promote early diagnosis and treatment, and attain greater survival rates.

Subjective norm. Operationally defined as participant s perception of salient others feelings and value of monthly BSE as well as her desire to comply with those feelings and values.

Motivators. Attitudes and subjective norm that promote or influence the intention to perform monthly BSE.

Barriers. Attitudes and subjective norm that discourage or deter the intention to perform monthly BSE.

Assumptions and Limitations

This study was based on the assumption that the modified questionnaire had significant reliability and validity. A second assumption was that the participants would answer the questions honestly and not be influenced by completing the survey in a medical treatment facility.

The study was limited as the sample size was small relative to the target population. The use of this sample limited the generalizability of the findings to other populations. Data was collected in a medical treatment facility from a population that was seeking healthcare. The participants may have more readily participated in health promotion and disease prevention activities than a group that does not seek healthcare. The tool required participants to write in the motivators and barriers to performing BSE. Without a list to choose from, some woman may have been limited to listing only the most significant factor(s) and not all that applied.

Summary

Breast self-examination is an essential secondary preventive screening tool that is recommended for all women age 20 and older. With the large population of female

military beneficiaries with unique healthcare demands, study of their BSE practices was warranted. Using the Theory of Reasoned Action as the theoretical framework, this study described the characteristics associated with BSE performance.

CHAPTER TWO — LITERATURE REVIEW

While breast cancer cases continued to rise in the 1980 s and level off since 1990 and breast self-examination (BSE) continues to be promoted and highly publicized as a means to early breast cancer detection, the rates of performance remain steadily below 50%, with some reports as low as 12% (Fletcher, Morgan, O Malley, Earp, & Degnan, 1989; Lierman, Young, Kasprzyk, & Benoliel, 1990; Massey, 1986). Numerous studies have been conducted on breast self-examination practice in hopes of shedding light on this discrepancy and assisting healthcare providers in predicting the performance or nonperformance of the behavior. Many different theoretical frameworks have been used in attempt to sort and correlate the multiple variables potentially involved with BSE behavior. Researchers have successfully used the Theory of Reasoned Action to predict BSE. Other researchers have looked at other breast screening behaviors that are also significant to this study. This chapter focuses on the past research that has been conducted on breast cancer screening, especially BSE, as it relates to motivators and barriers. This review will include studies designed in various frameworks with an emphasis on the Theory of Reasoned Action.

Motivators

Ajzen and Fishbein (1980) state that one's intent is a determinate of behavior and the motivation is reflected by attitudes and subjective norm. The following studies were conducted to predict those factors that positively influence and encourage the intent to perform breast cancer screening.

Attitudes

Little research has been done assessing attitudes as they relate to expected outcomes. Some studies found that the performance of BSE increased as women increased their attitudes and beliefs of the benefits of BSE (Alagna et al., 1987; Lierman et al., 1991). Alagna and colleagues (1987) studied 93 women with both high risk (32 women) and low risk (61 women) for breast cancer. They found increased performance in those women who were confident in BSE and its use to detect lesions (positive belief outcome). In a similar study with the use of questionnaires, Lierman and colleagues (1991) studied 93 women 50 years and older. They found that the women who performed frequent BSE had a positive attitude toward BSE. These participants reported that they had a schedule for performing BSE and they felt that BSE was an important activity even without a family history of breast cancer.

While expected outcomes regarding benefits have shown to be a factor toward female BSE practices, other motivators have been shown in the literature. For example, studies by Champion (1989) with 380 women and Fletcher et al. (1989) with 300 women used the Health Belief Model and found self-confidence was a motivator for increased BSE frequency.

Subjective Norm

In describing women's beliefs about what others want and their motivation to comply with others, Lierman and co-investigators (1991) found women who performed BSE at least four times in six months reported greater influence by salient others than those who performed BSE less frequently. The salient others who were reported as being the most influencing were, in order of highest to lowest influence, doctor, health

insurance program, friends and family, people most important to participant, magazines and newspapers, and friends and family with cancer. These women also reported greater motivation to comply with the wishes of these salient people.

Other studies found healthcare provider referral was a significant predictor of breast cancer screening intention and performance (Friedman et al., 1995; Michels et al., 1995). Friedman and colleagues (1995) in their study of 312 female hospital employees age 50 and older found physician referral for mammography was the strongest predictor of screening behaviors. Lierman et al. (1991) found in a study of 93 women over age 50 reported and increase in motivation to perform BSE as a result of media promotion of the behavior. In Craun and Deffenbacher's study (1987) of 227 college women, mailed reminders of BSE were effective in increasing the rate of examination from 21% to 58% six months after having received mailed reminders to perform monthly BSE.

Barriers

In addition to studying those variables that positively influence BSE performance, research has also attempted to explain those variables that discourage the intention and/or behavior. These barriers can also be described as they relate to attitudes and subjective norm.

Attitudes

Multiple studies have consistently identified attitudinal variables which relate to infrequent or no BSE performance. The variables include fear of finding something, embarrassment, anxiety, being too busy, procrastination, and forgetfulness (Friedman et al., 1995; Katz et al., 1995; Leathar & Roberts, 1985; Lierman et al., 1991).

Other common barriers found throughout the literature include reports of women's negative attitudes towards belief and evaluation of breast screening practices. This leads to unfavorable attitudes toward intention and behavior. Lierman and colleagues (1991) found in their study of 93 females over age 50 infrequent BSE performers reported they believed BSE was difficult, a waste of time, and not necessary without a history of cancer. Leathar and Roberts (1985) reported in their study of 136 group discussions with 30 to 65 year old women that some believed BSE was not important enough to perform frequently.

Lierman et al. (1991) showed an expected outcome of BSE to be the uncertainty of performance skill when women reported they were unsure how to perform BSE and were unsure that they would be able to notice change or detect a problem. Taylor and colleagues (1984) found a negative evaluation of outcome in their study of 70 diagnosed breast cancer patients. Twenty-four percent of the sample felt that they did not need to perform monthly BSE as clinical breast examinations during checkups were sufficient screens, even though most had an appointment only once every 4 to 6 months.

Subjective Norm

There is no available research on assessing subjective norm regarding barriers to BSE practices. Barriers, however, have been found in the literature regarding other screening practices. Friedman and co-investigators (1995) reported in their study of 312 female hospital workers over age 50 that these women were less likely to comply with mammography screening guidelines when cost and lost work time became barriers. These women also reported that their hospital supervisors were not supportive in that they were not willing to give their employees time off to attend appointments.

Michels and colleagues (1995) studied 309 female military beneficiaries age 40 and over regarding mammography screening practices. They mailed questionnaires to a random sample of 500 female military beneficiaries age 40 and older in a northwestern United States regional healthcare system. This population was in an equal-access healthcare system that fosters and encourages wellness and health promotion activities. This study found that 79% of these beneficiaries had had an initial mammogram, well above the national average of 64%; however, only 12% participated in regular mammography screening. Salient others' opinions were found to be important in reducing barriers to mammography. Health care providers' recommendation and system-related problems, such as needing a referral and difficulty scheduling an appointment, also were found to play a significant role in behavior intention. Although these issues do not directly apply to BSE, they do show subjective norm barriers to recommended breast screening practices.

Theoretical Framework

Many of the studies on predictors of breast self-examinations used the Theory of Reasoned Action as the theoretical framework. The researchers were able to draw conclusions on their findings based upon the theory. Lierman and colleagues (1990) studied 93 women age 50 and older in predicting BSE. They found the theory to be useful but found that only the attitudinal variables were significant predictors of intention. They also found that behavior was better predicted than intention. Finally, they found a 0.75 correlation between intention and behavior.

Deficits

Little data are available on the effects of subjective norm on behavior intention of BSE. This behavior has become a well-publicized and promoted intervention. Much research has been conducted on BSE and performance prediction; however, deficits in the literature remain. Few studies have looked at the large pool of military beneficiaries.

Studies are effective in describing those variables that predict frequent BSE intention or behavior; however, most do not thoroughly explain those variables that predict infrequent or complete lack of BSE. These individuals are a target of healthcare providers' interventions. Also, positive reinforcement should be given to those women who regularly perform BSE.

Finally, the literature is deficient in describing interventions to implement when low BSE performance is predicted. These interventions allow the abundance of research to be put to use and promote increased BSE performance among all women.

Summary

In summary on the basis of the literature review, the literature is consistent that women who believe BSE is effective (belief of outcome) and detects breast disease (evaluation of outcome) are more likely to perform BSE more frequently. This review also shows the significance of healthcare providers' recommendations in promoting BSE performance. It is also consistent in that many attitudinal barriers involving beliefs of outcome decrease the behavior intention and/or performance. However, the gaps or what is lacking in the literature are studies involving military beneficiaries and studies explaining infrequent BSE performance.

CHAPTER THREE — METHODOLOGY

Breast self-examination (BSE) continues to be recommended for all women as a means of early breast cancer detection. Little research has been done on the health practices of the over two million female Department of Defense beneficiaries (<http://www.ha.osd.mil/cs/98bcinit1.html>). No available study had looked at the factors associated with this population's practice of BSE. This research was designed as a descriptive study to describe the characteristics (rate, motivators, barriers, attitudinal variables, and subjective norm) of intention to perform BSE. In this chapter, sample, measurement strategies, and protection of human rights are discussed.

Sample

A non-random, voluntary, convenience sample of at least 100 women eligible for care in a northeastern United States regional army healthcare system was proposed. Permission was granted from the governing medical treatment facility for the collection of up to 150 questionnaires. In six, non-continuous days during late November and early December 1998, 250 questionnaires were individually distributed by the researcher at the ObGyn clinic (2 days), the Wellness Center (1 day), and the General Medicine clinic (3 days) of the medical center. All women presenting to the clinics were asked to complete a questionnaire on a voluntary basis. They were given an option of dropping it in a box in the clinic or by returning it by mail to the investigator. A total of 113 questionnaires were completed and returned (70 at the medical facility and 43 via the mail) resulting in a 45.2% response rate. Women who were not 20 years of age or older, not military beneficiaries, or not eligible for care were omitted from the study. Three returned questionnaires did not meet the eligibility criteria and, therefore, were not included in the

data analysis. Two participants were not military beneficiaries, and one was less than 20 years of age. A total of 110 questionnaires was used for the data analysis. Due to the favorable response and return of questionnaires, use of an additional military medical treatment facility was not needed.

Measurement Strategies

Questionnaire

The tool used for this study was modified from one designed by Michels et al. (1995) in a study of mammography use. The original questionnaire was developed from the 1985 National Health Interview Survey, the Washington State Behavior Risk Factor Surveillance System, and a tool used by Montano and Taylor (Link, 1997). Michels et al. study used a sample of 500 women who were eligible for care at the Madigan Army Medical Center, Tacoma, Washington. A pilot study on 50 women was performed by Michels et al. to obtain estimates of the reliability and validity when using the original tool with the military population. The original tool had a 0.85 reliability and an eighth grade level of readability. For this study, written permission was obtained from Colonel Michels for use and modification of the questionnaire (see Appendix A).

Minor changes were made to Michels et al. (1995) questionnaire prior to its use in this study. The original tool consisted of 28 questions. Six were multiple-part, using a seven-point Likert scale regarding intention, attitudes, motivators, and barriers on mammography, breast cancer, and evaluations of salient others. Nineteen questions were multiple choice or yes/no questions about health practices, health history, and demographic data. The remaining three questions were fill in the blank questions about demographic data and barriers to mammography.

The modified tool for BSE had 24 questions (see Appendix C). The variables measured by this tool are similar to Michels et al. (1995) study and included intention, attitudes, subjective norm, motivators, and barriers. Nine multiple-choice and fill-in questions were asked regarding demographic information on age, marital status, race, beneficiary category, branch of service, rank, employment status, education level, and household income. These data were used to describe the sample. Attitudes and subjective norms were each measured by two multiple-part questions. These questions used a four point Likert scale (1 = strongly disagree/strongly unacceptable; 4 = strongly agree/strongly acceptable). Participants were asked to list motivators and barriers to performing BSE. The additional nine multiple-choice questions provided information on the participants' healthcare demographics and BSE practices.

More specifically, Questions 16-24 of the questionnaire were multiple choice and fill-ins that provided the demographic data of age, rank, branch of service, beneficiary category, employment status, marital status, education level, race, and income, respectively. Multiple choice Questions 12-14 assessed healthcare provider information. Questions 15 and 3 were yes/no questions and assessed preventive healthcare practices and personal history with breast disease and breast cancer. Question 8 measured the participants' perceived risk of breast cancer. Questions 1, 2, and 9 measured rate of BSE performance and intention. These four questions were multiple choice questions. The motivators and barriers of BSE were analyzed via Questions 10-11. Participants were asked to write in their motivators and barriers. The attitudes and subjective norm that affect BSE were measured by Questions 4-7. These questions were designed with four point Likert scale responses. Question 4 assessed barriers of attitudes. Question 5

assessed motivators of attitudes. Question 6 reported motivators of salient others' beliefs. Question 7 reported motivation to comply with salient others.

Validity

This tool is appropriate for the proposed study as it was tested with a sample military beneficiary population at a major U.S. Army medical center. After modification for BSE, the tool underwent a preliminary two-person expert panel review. This initial panel consisted of two women's health nurse practitioners with expertise in health promotion and disease prevention. After minor modifications from the preliminary review, a second two-person expert review panel using a 4-point Likert scale rated the items on the tool as to the degree of relevance to the purpose of the study resulting in a content validity index of 1.0. This second panel consisted of a nurse practitioner and a physician's assistant regarded by their peers as having expertise in research and clinical patient care dealing with health issues and breast self-care.

Reliability

Estimate of stability of responses over time, a dimension of reliability was obtained for the modified tool using a test/retest format during data collection. Ten participants volunteered to complete the same questionnaire a second time. Each retest candidate first self-addressed an envelope containing an unmarked copy of the questionnaire and return envelope to be mailed to the candidate later, then responded to the items on the original questionnaire. The researcher mailed the unmarked retest questionnaire to the participant two weeks after completion of the questionnaire the first time. Six (60%) returned the retest questionnaire. A percent agreement of 0.75 between the two testing occasions provided supporting evidence for the stability or test/retest

reliability for using the newly modified tool with this sample. Only the questionnaires completed on the first occasion were used in the data analysis.

Protection of Human Rights

The study proposal was presented to the Uniformed Services University of the Health Sciences (USUHS) Institutional Review Board, Research Administration and the Department of Clinical Investigation committee of the designated healthcare system. Written consent was obtained from the department chairperson and nursing department chief. Verbal consent was obtained from the head nurses of the participating clinics.

Participation and completion of the questionnaire was voluntary. An information paper with information regarding the survey (see Appendix B) was available to all participants. They were instructed on the following: completion of the questionnaire implied consent, absence of any monetary reimbursements or rewards, and USUHS sponsorship of the study, and prior review and approval of the study by the medical treatment facility. Instructions on completion of the questionnaire were provided. Participants were informed that their confidentiality and privacy would be maintained. They were instructed not to write any identifying information; such as name, phone number, address, or social security number; on the questionnaire or return envelope. All demographic data was presented for sample description only. No foreseeable risks or harm were associated with participation in this study.

Summary

Chapter 3 reviewed the sample, measurement strategies, and protection of human rights for this study. A detailed explanation of the questionnaire was given and how each question is relevant to the purpose and research questions. This study used the Theory of

Reasoned Action as its framework. This theory states that intent determines behavior.

The data from this study identified those factors that influence female military beneficiaries' intent to perform BSE and the significance of those factors. In Chapter 4, the data obtained from the questionnaires will be presented.

CHAPTER FOUR — ANALYSIS

The purpose of this study was to describe the motivators and barriers to performing BSE in female military beneficiaries age 20 and over in an army regional healthcare system. Additionally, the study was to describe the sample's rate of intention to perform BSE. This chapter presents the general healthcare demographics, BSE practices, motivators and barriers, and attitudes and subjective norms. This research was designed as a descriptive study using a modified questionnaire (see Appendix C). Descriptive statistics were used in the data analysis. The SPSS (Statistical Packages for the Social Sciences) computer program was used in the statistical analysis of this study.

Sample Demographics

General Demographics

A summary of the general demographics of the sample ($n = 110$) is presented in Tables 1-3. The sample had a fairly even distribution across age groups. The mean age was 44 years with a standard deviation of 17.5. The ages of the sample ranged from 20 to 81 years. The participants were predominantly married and the majority was either of Caucasian or African American race (over 85%). Approximately 70% of the sample population were either an active duty member or a dependent wife, and more than half of the women had a sponsor of either noncommissioned officer (E5-E9) or field grade officer (O4-O6) rank. Most of the population was associated with the army. The majority of the respondents were employed and had greater than a high school education. Greater than 88% of the sample reported incomes ranging from \$20,000 to \$50,000 and over. Approximately 36% of the sample reported incomes of \$50,000 and over. While most questionnaires had completed data, less than 4% had some missing items and

approximately 12% excluded information pertaining to rank. Even though the question asked for the rank or sponsor's rank, many women may feel some distancing from the military because they are not or have not been in the military. Other women have a retired spouse and/or deceased spouse that was the active duty member which may further remove the women from involvement with the military and her spouse's rank.

Table 1

General Demographics for Sample Population of Female Military Beneficiaries

Demographic Characteristic	Frequency ^a	Percent
Age		
20-29	26	24.5
30-39	25	23.6
40-49	19	17.9
50-59	9	8.5
60-69	11	10.4
70 and over	16	15.1
Marital Status		
Married	64	58.2
I have never been married.	20	18.2
Divorced	13	11.8
Widowed	11	10.0
Separated	2	1.8
Race		
White/Caucasian	51	46.8
Black/African American	43	39.4
Hispanic	5	4.6
Asian/Pacific Islander	5	3.7
Other	5	5.5

Note. ^an = 110 per demographic characteristic: Age, Marital Status, Race.

Table 2

Military Demographics for Sample Population of Female Military Beneficiaries

Demographic Characteristic	Frequency ^a	Percent
Beneficiary		
Active duty member	47	44.3
Wife	31	29.2
Reserve member	13	12.3
Retiree	10	9.4
Other	5	4.6
Branch		
Army	87	81.3
Air Force	9	8.4
Navy	6	5.6
Other	5	4.6
Sponsor's Rank		
E1-E4	13	13.4
E5-E9	33	34.0
Warrant officer	6	6.2
O1-O3	17	17.5
O4-O6	27	27.8
O7 and higher	1	1.0

Note. ^an = 110 per demographic characteristic: Beneficiary, Branch, Sponsor's Rank.

Table 3

Additional Demographics for Sample Population of Female Military Beneficiaries

Demographic Characteristic	Frequency ^a	Percent
Employed		
Yes	81	73.6
No	29	26.4
Educational Level		
8 years or less	1	0.9
9-11 years	2	1.8
12 years (high school graduate)	17	15.6
13-15 years (some college or technical school)	39	35.8
16 years or more (college graduate or graduate school)	50	45.9
Annual Income		
Under \$10,000	6	5.5
\$10,000-\$19,999	6	5.5
\$20,000-\$29,999	21	19.3
\$30,000-\$39,999	22	20.2
\$40,000-\$49,999	15	13.8
\$50,000 and over	39	35.8

Note. ^an = 110 per demographic characteristic: Employed, Educational Level, Annual Income.

Healthcare Demographics

Table 4 lists the demographics of the healthcare sought by the sample population. Most receive care at a military facility (77.3%) and are seen by a doctor (78.2%). Obstetrician-Gynecologists and Internists (Internal Medicine) were reported as the type of physician seen most frequently as the regular healthcare provider (61.5%).

Table 4

Healthcare Demographics for Sample Population of Female Military Beneficiaries

Demographic Characteristic	Frequency	Percent
Source of Medical Care ^a		
Military hospital or clinic	85	80.2
Civilian hospital, clinic, or provider s office	21	19.8
Regular Provider ^a		
Doctor (M.D. or D.O.)	86	81.1
Nurse practitioner	19	17.9
Physician s assistant	1	0.9
Type of Doctor ^b		
Obstetrician-Gynecologist	42	33.3
Internist (Internal medicine)	38	30.2
Family physician (Family practice)	25	19.8
Surgeon	5	4.0
I don t see a doctor as my regular provider.	10	7.9
Don t know	4	3.2
Other	2	1.6

Note. ^an = 110 per demographic characteristic: Source of Medical Care, Regular

Provider; ^bn = 130 per demographic characteristic: Type of Doctor.

The health practices in the last year that the sample population participated in are represented by Figure 2. Overall the majority of the sample had taken part in the listed health practices. Only mammography (44.5%) was less than fifty percent; however, this health practice is predominantly age-related for those 50 years and older. Thirty-six

participants (32.7%) were 50 years or older. Of these women, 30 (83.3%) had had a mammogram in the last year.

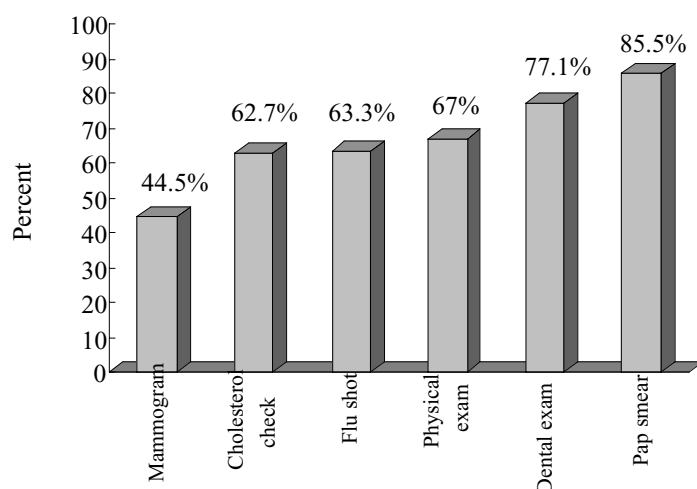


Figure 2.

Valid Percent of Yes Responses for Health Practices over the Past Year

As represented by Figure 3, most participants had no personal experience with breast disease nor did they have a close relative or friend who had experienced breast cancer. Only fifteen (13.7%) respondents felt they were at a high to very high risk of getting breast cancer. Figure 4 represents the complete breast cancer risk data.

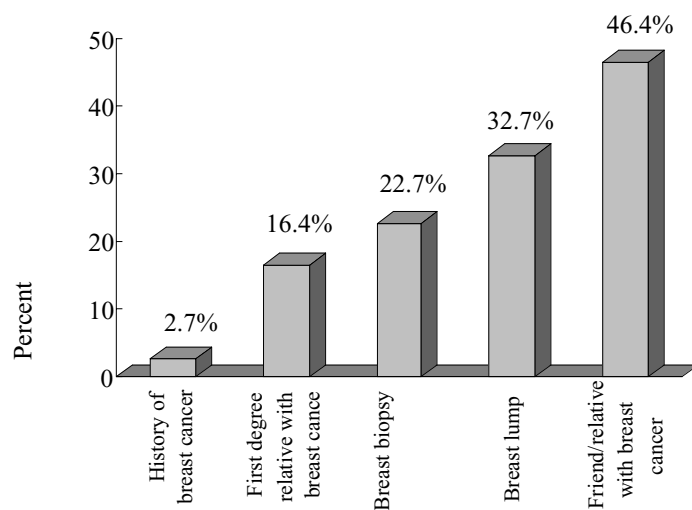


Figure 3.

Valid Percent of Yes Responses for Personal Experience with Breast Disease and Breast Cancer

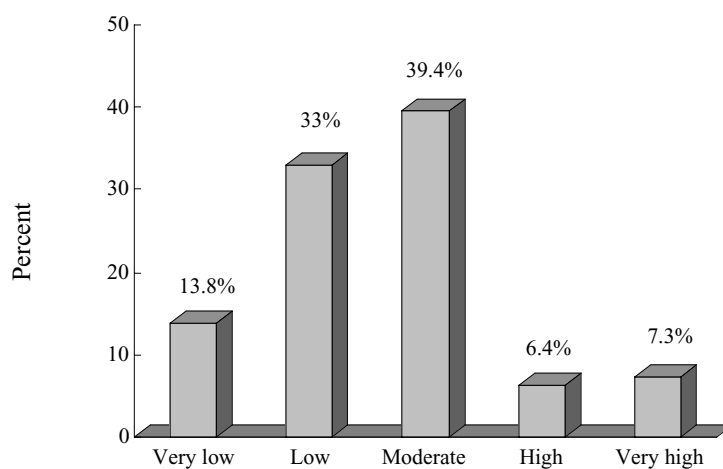


Figure 4.

Valid Percent of Self-Assessed Risk for Breast Cancer

BSE Practices

Approximately 33% percent of the woman sampled reported performing BSE at least 10 times last year and 58% intending on performing BSE at least ten times next year. When asked how long it had been since last performing BSE, 49.1% answered within a month. Table 5 presents the complete data. Women over the age of 50 had a higher rate (40.0%) of performing BSE 10-12 times last year. Approximately 44% of the women over 50 who also had a mammogram in the past year performed BSE 10-12 times in the last year.

Table 5

Breast Self-Examination (BSE) Performance and Intention Rates of Female MilitaryBeneficiaries

BSE Practice	Frequency ^a	Percent
a. BSE performance in the last year		
10-12 times	36	32.7
7-9 times	19	17.3
4-6 times	21	19.1
1-3 times	22	20.0
I did not perform BSE last year.	12	10.9
b. Intended BSE performance for next year		
10-12 times	64	58.2
7-9 times	18	16.4
4-6 times	8	7.3
1-3 times	13	11.8
I do not intend to perform BSE next year.	7	6.4
c. Time since last BSE		
Within a month	54	49.1
1-3 months	30	27.3
4-6 months	14	12.7
7-9 months	2	1.8
Over 12 months	6	5.5
I have never performed a BSE.	4	3.6

Note. ^an = 110 per BSE practice: a, b, c.

Motivators and Barriers

Participants were asked to write in all factors that encouraged and discouraged their performance of BSE consistent with Michels et al. (1995) earlier study and tool development. These were coded and analyzed as the motivators (see Table 6) and barriers (see Table 7) to performing BSE. Many women listed multiple factors. One

hundred sixty-two (162) responses were listed as motivators on the 110 questionnaires. Fifteen (13.6%) participants did not answer this question. Early detection (24.7%) was the most frequently given reason to perform BSE. This was closely followed by being the healthy/right thing to do (21.0%) and personal risk/family history (20.4%).

Table 6

Reported Motivators to Breast Self-Examination (BSE) Performance of Female Military Beneficiaries

BSE Motivator	Frequency ^a	Percent
Early detection	40	24.7
It s the healthy/right thing to do.	34	21.0
Personal risk/family history	33	20.4
Healthcare provider recommendation	15	9.3
Friends/others with breast cancer recommendation	14	8.6
Early treatment	11	6.8
Media recommendation	8	4.9
Family recommendation	5	3.1
No motivators	2	1.2

Note. ^a n = 162 responses.

One hundred seventeen (117) responses were listed as barriers on the 110 questionnaires. Sixteen (14.6%) participants did not give a response to the question. Slightly less than one third of the respondents noted that there were no barriers regarding BSE performance. Of the women who noted barriers, 23.9 % reported forgetfulness, and 18.8% noted too busy/not having enough time.

Table 7

Reported Barriers to Breast Self-Examination (BSE) Performance of Female MilitaryBeneficiaries

BSE Barrier	Frequency ^a	Percent
There are no barriers.	35	29.9
Forgetful	28	23.9
Too busy/not enough time	22	18.8
I don t know how, what to look for, or if doing it right.	9	7.7
Fear of finding something or having breast cancer	9	7.7
Pain/discomfort	6	5.1
Embarrassed	2	1.7
My healthcare provider will find anything or they can do it better.	2	1.7
Waste of time/don t care	1	0.9
Not at risk	1	0.9
It doesn t work/too hard.	1	0.9
Other	1	0.9

Note. ^a n = 117 responses.

Attitudes and Subjective Norms

Attitudes

Multiple questions were asked of the participants regarding their attitudes of breast cancer and BSE. The respondents answered the questions using a 4-point Likert scale (1 = strongly disagree/strongly unacceptable; 4 = strongly agree/strongly acceptable). Participants answering 1 or 2 on the Likert scale were categorized as disagreement/unacceptable. Those answering 3 or 4 were categorized as agree/acceptable. See Table 8. Eighty-three participants (75.5%) had attitudes that breast cancer leads to radiation and chemotherapy. However, this was reported as

unacceptable in only 15 (13.8%) of the responses. Fifty-three respondents (48.2%) agreed that BSE performance involves thinking about having breast cancer, and 35 participants (32.1%) reported that this was unacceptable.

Table 8

Attitudes Affecting Breast Self-Examination (BSE) Performance of Female MilitaryBeneficiaries

BSE Attitude	Frequency of Response ^a		Mean ^b	S.D. ^c
	Disagree	Agree		
Performing BSE causes pain or discomfort. ^d	91	18	1	.84
Performing BSE causes embarrassment. ^d	101	8	1	.67
Performing BSE is inconvenient.	85	25	1	.98
Performing BSE involves thinking about the possibility of having breast cancer.	57	53	2	1.11
If breast cancer were found, it would lead to surgery changing my physical appearance.	39	71	3	.96
If breast cancer were found, it would lead to radiation and chemotherapy.	27	83	3	.90
	Unacceptable	Acceptable		
Performing BSE causes pain or discomfort.	13	97	4	.84
Performing BSE causes embarrassment. ^d	13	96	4	.87
Performing BSE is inconvenient.	17	93	3	.92
Performing BSE involves thinking about the possibility of having breast cancer. ^d	35	74	3	1.08
If breast cancer were found, it would lead to surgery changing my physical appearance. ^d	23	86	3	.91
If breast cancer were found, it would lead to radiation and chemotherapy. ^d	15	94	3	.83

Note. ^an = 110; ^bMean is based on a 4-point Likert scale with a 1 or 2 indicating

disagreement or unacceptability and 3 or 4 indicating agreement or acceptability; ^cS.D. =

Standard deviation; ^d = 1 missing data; ^e = 2 missing data; ^f = 3 missing data.

Subjective Norms

Questions regarding participants' salient others were asked to elicit subjective norm data. The same 4-point Likert scale and categorization as described under attitudes were used for these questions (see Table 9). A fairly even distribution of responses was given for friends/neighbors, husband/partner, and relatives recommending BSE. The majority of the sample population (90%) agreed that their healthcare provider and the media recommend BSE. Ninety-four point five percent (94.5%) of the sample population agreed that they try to do what their healthcare provider recommends. Seventy-five participants (70.1%) agreed that they intend upon doing what their husband/partner recommends.

Table 9

Subjective Norms Affecting Breast Self-Examination (BSE) Performance of FemaleMilitary Beneficiaries

BSE Attitude	Frequency of Response ^a		Mean ^b	S.D. ^c
	Disagree	Agree		
Friends/neighbors recommend I perform BSE.	50	60	3	1.19
My husband/partner recommends I perform BSE. ^f	53	54	2	1.21
Other relatives/family recommend I perform BSE.	47	63	3	1.24
My doctor, nurse practitioner, or physician s assistant recommends I perform BSE.	11	99	4	.87
The media recommends I perform BSE.	11	99	4	.88
	Disagree	Agree		
I try to do what my friends/neighbors recommend. ^e	63	45	2	.96
I try to do what my husband/partner recommends. ^f	32	75	3	1.01
I try to do what other relatives/family recommend. ^e	37	71	3	.94
I try to do what my doctor, nurse practitioner, or physician s assistant recommends.	6	104	4	.75
I try to do what the media recommends. ^e	54	54	2	.90

Note. ^an = 110; ^bMean is based on a 4-point Likert scale with a 1 or 2 indicating

disagreement or unacceptability and 3 or 4 indicating agreement or acceptability; ^cS.D. =

Standard deviation; ^d = 1 missing data; ^e = 2 missing data; ^f = 3 missing data.

Summary

This chapter detailed the data collected in an attempt to describe the BSE practices in a military beneficiary population. Demographics, BSE practice information, reported motivators and barriers, and BSE attitudes and subjective norms were analyzed. Descriptive statistics were used to present the data. Most participants do not perceive barriers to BSE. Many respondents had an unacceptable attitude that performing BSE involved thinking about having breast cancer. Healthcare providers are important in recommending BSE, and these women were more apt to comply with those recommendations.

CHAPTER FIVE — SUMMARY

Breast cancer continues to be diagnosed in thousands of women and takes the life of many more each year. The American Cancer Society's guidelines for breast cancer screening include monthly breast self-examinations (BSE) in all women 20 years and older. Despite the recommendations, studies have shown that only 30% of females perform BSE. There has been limited data assessing BSE practices in the military. With over 200,000 active duty females and an additional two million beneficiaries, the importance of assuring BSE is essential secondary preventive health care to ensure a healthy force and a healthy military family.

The purpose of this research was to describe the characteristics associated with performance of BSE and to investigate the motivators and barriers that may affect BSE practices as identified in the research questions. This chapter discusses research findings and relates these findings to prior research studies. Recommendations for future studies are also discussed.

Conclusions

Intent

The study revealed that most military beneficiaries in the selected healthcare facility intend to perform BSE. These findings are significantly higher than published studies. This population had over a 58% rate of intended performance. However, this population's actual reported rate of monthly BSE performance (32.7%) is comparable with the general population. A note should be made that the cited research studies only report performance of BSE and make no delineation of various frequencies of performance. This study shows that over 89% of the population performed BSE at least

once in the last year and over 93% intend on performing it at least once in the next year. An interesting piece of data shows that almost 50% of the population had performed BSE within the last month. One possibility is that Breast Cancer Awareness month was October, the month prior to the start of data collection for this study, which may have influenced these women.

In addition, mention should be made that this sample population was a group in which 87% perceived themselves at a moderate to very low risk for breast cancer and in which less than 50% had any personal experience with breast disease or breast cancer. This is consistent with Lierman et al. (1991) who found women with a positive attitude towards BSE did so because they felt it was an important activity even though they had no family history of breast cancer. Also, this is a group who supports and takes part in health promotion/disease prevention activities. Nearly 50% of the group had participated in all of the listed health practices.

Of concern is the consistency that this population had with the general population in regards to rate of BSE performance. Within the military healthcare setting, emphasis is placed on health promotion and disease prevention. This population has been exposed to the Put Prevention into Practice campaign for many years (Department of Health and Human Services [DHHS], 1998) yet the data did not reflect an increase in performance over the general public in this preventive behavior.

In summary, this population was consistent with previous studies for monthly performance, but they had a significantly higher rate of performance with regards to various frequencies of BSE performance and a high rate of intention to perform BSE.

According to the Theory of Reasoned Action, this increased intention indicates future increased performance as the theory states intention is a determinate of behavior.

Motivators and Barriers

Over sixty percent (60%) of the responses involved three motivators (early detection, healthy/right thing to do, and personal risk/family history). This group's top two responses imply a belief that BSE allows for early detection of breast disease and that BSE is a health maintenance practice that should be performed.

With regards to the barriers to BSE performance, the most frequently given response (29.9%) was that there are no barriers. This response was given 35 times implying that 35 women of the sample felt the importance of BSE was so strong that no response was justified in being considered a barrier. The other top two responses (forgetfulness and too busy/not enough time) captured over 42% of the responses.

The reported motivators of detection and importance of BSE are consistent with other studies of Alagna et al. (1987). They found an increased performance in women who were confident in BSE and its use to detect lesions. Lierman and colleagues (1991) found BSE performance in women who felt it was an important health promotion activity. In addition, the barriers of forgetfulness and being too busy can be found throughout previous research (Friedman et al., 1995; Katz et al., 1995; Leathar & Roberts, 1985; Lierman et al., 1991). Leathar & Roberts (1985) and Lierman et al. (1991) reported barriers of BSE unimportance and not being sure how to perform which were reported by this study's participants.

Attitudes and Subjective Norms

The responses indicate that the subjects in this study had negative beliefs about BSE that it involves thinking about breast cancer (48.2%) and that breast cancer leads to appearance-changing surgery (64.5%) and radiation and chemotherapy (75.5%). However, the participants' evaluations of these beliefs were less negative. The most significant negative evaluation was the unacceptability (32.1%) that BSE involves thinking about breast cancer. Greater than 75% of the population reported that the other deterring attitudes were acceptable. Little data is available on the evaluation of attitudes as they relate to BSE performance.

Ninety percent (90%) of the sample agree that their healthcare provider and the media recommend BSE performance. With regard to the population's motivation to comply with their salient others, fifty percent (50%) or more of the population reported trying to be compliant with their husband/partner, relatives/family, healthcare provider, and the media. Compliance with a healthcare provider was the greatest at 94.5%. This is consistent with other studies that found healthcare provider recommendation as a significant predictor of screening intention and performance (Friedman et al., 1995; Lierman et al., 1991; Michels et al., 1995).

With regard to the Theory of Reasoned Action, this population had many positive and few negative attitudes towards BSE performance. Participants reported early detection as a motivation for BSE performance. In addition, this population also acknowledged the importance of many of their salient others' recommendations and their desire to comply with those of their healthcare provider, husband/partner, family, and the media. These variables could explain the high rate of overall BSE intention and

performance. Women with positive attitudes about a behavior and supportive subjective norms are more likely to intend to perform the behavior.

Recommendations

Implications for Healthcare Providers

This study showed that women of this population attempt to comply with their healthcare provider's recommendations more than with any other salient other. Healthcare providers must recognize their influence on patients' behavior and must continue to advocate BSE to increase women's intentions to perform and subsequent performance of BSE. Husbands/partners were the second most frequently reported salient other with influence on women's intentions. Healthcare providers should utilize this data and educate the husband/partner on the importance of BSE for their wife/partner, thereby, contributing to a woman's motivation to comply. Despite the debate in the literature over the efficacy of BSE and its role in decreasing morbidity and mortality, healthcare providers must take notice from many studies that survival rates have been shown to increase and early detection of breast lesions has occurred with BSE performance. More research is needed in this area and until definitive data is collected this screening tool should not be ignored. Healthcare providers must continue to educate all women as well as the general population on the benefits of BSE so as to offset the negative attitude of being too busy with a positive attitude in believing in BSE and its usefulness in health promotion and disease prevention activities. Finally, existing strategies to overcome the barrier of forgetfulness should continue to be reinforced and recommended.

Future Research

With the prevalence of breast cancer and its far-reaching affects on women, research into all aspects of prevention, screening, diagnosing, and treatment must continue. In relation to this study, further research is needed to test the effectiveness of methods used to increase BSE intention and performance. In addition, new methods that address the barrier of forgetting to perform BSE should be developed and implemented. The female military beneficiary population has unique health concerns and demands. This population warrants the attention of future research in all areas of health promotion and disease prevention.

LIST OF REFERENCES

- Alagna, S., Morokoff, P., Bevett, J. & Reddy, D. (1987). Performance of breast self-examination by women at high risk for breast cancer. Women & Health, 12(2), 29-46.
- Ajzen, I. & Fishbein, M. (1980). Understanding attitudes and predicting social behaviors. Englewood Cliffs, NJ: Prentice-Hall.
- Blue, C. L. (1995). The predictive capacity of the theory of reasoned action and the theory of planned behavior in exercise research: An integrated literature review. Research in Nursing & Health, 18(2), 105-121.
- Branch, L. (1998). Breast health. In E. Youngkin & M. Davis (Eds.), Women s health: A primary care clinical guide (pp. 363-400). Stamford, CT: Appleton & Lange.
- Champion, V. (1989). Effect of knowledge, teaching method, confidence and social influence on breast self-examination behavior. Image: Journal of Nursing Scholarship, 21(2), 76-80.
- Champion, V. & Miller, T. (1992). Variables related to breast self-examination. Psychology of Women Quarterly, 16, 81-96.
- Craun, A. & Deffenbacher, J. (1987). The effects of information, behavioral rehearsal, and prompting on breast self-exams. Journal of Behavioral Medicine, 10(4), 351-365.
- Department of Health and Human Services (1998). Put prevention into practice: Clinician s handbook of preventive services. Washington, DC: U.S. Government Printing Office.

Eley, W., Hill, H., Chen, V., Austin, D., Wesley, M., Muss, H., Greenbert, R., Coates, R., Correa, P., Bedmond, C., Hunter, C., Herman, A., Kurman, R., Blacklow, R., Shapiro, S. & Edwards, B. (1994). Racial differences in survival from breast cancer: Results of the National Cancer Institute black/white cancer survival study. Journal of the American Medical Association, 272(12), 947-954.

Fisher, W. A., Fisher, J. D. & Rye, B. J. (1995). Understanding and promoting AIDS-preventive behavior: Insights from the theory of reasoned action. Health Psychology, 14(3), 255-64.

Fletcher, S., Morgan, T., O Malley, M., Earp, J. & Degnan, D. (1989). Is breast self-examination predicted by knowledge, attitudes, beliefs, or sociodemographic characteristics? American Journal of Preventive Medicine, 5(4), 207-215.

Friedman, L., Woodruff, A., Lane, M., Weinberg, A., Cooper, H. & Webb, J. (1995). Breast cancer screening behaviors and intentions among asymptomatic women 50 years of age and older. American Journal of Preventive Medicine, 11(4), 218-223.

Fox, S., Klos, D., Tsou, C. & Baum, J. (1987). Breast cancer screening recommendations: Current status of women s knowledge. Family and Community Health, 10(3), 39-50.

Gapstur, S., Dupuis, J., Gann, P., Collila, S. & Winchester, D. (1996). Hormone receptor status of breast tumors in black, hispanic, and non-hispanic white women. Cancer, 77, 1465-1471.

Gunby, P. (1995). Unique medical problems of military become part of intensified research into women s health. Journal of the American Medical Association, 274(12), 932-933.

Katz, R., Meyers, K. & Walls, J. (1995). Cancer awareness and self-examination practices in young men and women. Journal of Behavioral Medicine, 18(4), 377-384.

Leathar, D. & Roberts, M. (1985). Older women s attitudes towards breast disease, self-examination, and screening facilities: Implications for communication. British Medical Journal, 290, 668-670.

Lierman, L., Kasprzyk, D. & Benoliel, J. (1991). Understanding adherence to breast self-examination in older women. Western Journal of Nursing Research, 13(1), 46-66.

Lierman, L., Young, H., Kasprzyk, D. & Benoliel, J. (1990). Predicting breast self-examination using the theory of reasoned action. Nursing Research, 39(2), 97-101.

Link, T. (1997). Factors influencing compliance with mammography screening recommendations in an Air Force population. Unpublished master s thesis proposal, Uniformed Services University of the Health Sciences, Bethesda, Maryland.

Massey, V. (1986). Perceived susceptibility to breast cancer and practice of breast self-examination. Nursing Research, 35(3), 183-185.

McCool, W. (1994). Barriers to breast cancer screening in older women: A review. Journal of Nurse-Midwifery, 39(5), 283-299.

Michels, T. C., Taplin, S. M., Carter, W. B. & Kugler, J. P. (1995). Barriers to screening: The theory of reasoned action applied to mammography use in a military beneficiary population. Military Medicine, 160(9), 431-437.

Parker, S., Tong, T., Bolden, S. & Wingo, P. (1997). Cancer statistics, 1997. Cancer: Cancer Journal for Clinicians, 47, 5-27.

Public Health Service. (1991). Healthy people 2000: national health promotion and disease prevention objectives (DHHS Publication No. 91-50212). Washington, DC: U.S. Government Printing Office.

Ries, L., Kosary, C., Hankey, B., Miller, B., Hurray, A. & Edwards, B. (1997). SEER cancer statistics review, 1973-1994 (NIH Publication No. 97-2789). Bethesda, MD: National Cancer Institute.

Taylor, S., Lichtman, R., Wood, J., Blum, A., Dosik, G. & Leibowitz, R. (1984). Breast self-examination among diagnosed breast cancer patients. Cancer, 54, 2528-2532.

Wojcik, B., Spinks, M. & Optenberg, S. (1998). Breast carcinoma survival analysis for African American and white women in an equal-access health care system. Cancer, 82, 1310-1318.

APPENDIX A

Tool Permission

DEPARTMENT OF THE ARMY
Madigan Army Medical Center
Tacoma, Washington 98431

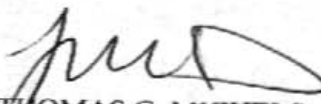
April 23, 1998

MEMORANDUM FOR: CPT Kolet R. Pablo, AN, Uniformed Services University of the Health
Sciences, Bethesda, MD 20814-4799

SUBJECT: Consent for use of Research Questionnaire

1. Consent is granted for use of the questionnaire used in the study, Barriers to Screening: The Theory of Reasoned Action Applied to Mammography Use in a Military Beneficiary Population. Modification to the tool for use with breast self-examination is also authorized.

2. Point of contact is the undersigned at (253) 968-2085, Family Practice Clinic, Madigan Army Medical Center.


THOMAS C. MICHELS
LTC, MC
COL

APPENDIX B

Information Paper

Information Paper

Title of Research: Evaluating Breast Self-Examinations in a Military Beneficiary Population

Investigator: Kolet R. Pablo, Captain, Army Nurse
Uniformed Services University of the Health Sciences (USUHS)
Graduate School of Nursing
4301 Jones Bridge Road
(301) 315-9118 (home)

Purpose of Study: The purpose of this study is to describe the motivators and barriers to performing breast self-examinations (BSE) in female military beneficiaries age 20 and over in an Army regional health care system.

Condition for Participation: You must be a female age 20 years or older who is eligible for military health care.

Procedure/Tasks: Each participant will be asked to complete the accompanying survey form and return it to the investigator. Participants may elect to complete the survey at home and mail it in the self-addressed stamped envelope.

Risk/Benefit: This study involves no physical risks or discomfort to you. While this study may not help you personally it may provide information to health care providers to help them provide education regarding breast self-examinations and breast cancer. If you have any questions about your participation in this study, please contact the investigator or the Office of Research at USUHS at (301) 295-3303.

Confidentiality: Any information obtained will be kept strictly confidential. You have the right to withdraw from the study. You have the right not to answer any or all the questions. Please do not write any identifying information such as, name, phone number, address, or social security number on the survey.

Cost: There is no cost to you for your participation in this study nor will you receive any monetary reimbursements or rewards for your participation.

Information from the Investigator: The investigator will be happy to answer any questions regarding the study. This study is sponsored by USUHS, Bethesda, MD and has been reviewed and approved by Walter Reed Army Medical Center. The results of the study will be available through Nursing Research Service at Walter Reed Army Medical Center after the data has been collected and analyzed.

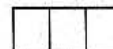
Consent: To maintain anonymity, completion of the survey form implies consent to participate in the study.

APPENDIX C

Questionnaire



13036



BREAST SELF-EXAMINATION QUESTIONNAIRE

Thank you for taking the time to complete this questionnaire about military beneficiaries and breast self-examinations. Your honest responses are important information that will enable us to examine some of the factors that are involved in women's health care.

This questionnaire is completely voluntary. If you do not wish to complete it, please turn in the blank copy. By completing this questionnaire, you are giving your consent to be included in this study. Your involvement in this study is limited to the completion of this questionnaire which will take approximately 10 minutes. When you have finished answering the questions, please drop your survey in the box, or pick up a self-addressed, stamped envelope and mail the completed survey to the investigator. Thank you for your cooperation and help with this study.

Please answer all questions in the order given. Thank you. Your answers are important and appreciated.

Q1. How many times in the last year did you perform breast self-examination?

- ☐ 10-12 times
- ☐ 7-9 times
- ☐ 4-6 times
- ☐ 1-3 times
- ☐ I did not perform breast self-examination last year.

Q2. How many times in the next year do you intend to perform breast self-examination?

- ☐ 10-12 times
- ☐ 7-9 times
- ☐ 4-6 times
- ☐ 1-3 times
- ☐ I do not intend on performing breast self-examination in the next year.

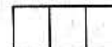
Q3. Have you ever had (please circle one answer for each item)

- | | | |
|---|-----|----|
| A. Breast cancer? | Yes | No |
| B. A breast biopsy (removal of a small piece of breast tissue)? | Yes | No |
| C. A breast lump? | Yes | No |
| D. A mother, sister, or daughter with breast cancer? | Yes | No |
| E. A close friend or other relative with breast cancer? | Yes | No |





13036



Instructions for Rating Scales

Some questions in this survey ask you to rate your opinions. Please make a circle around the number that best describes your opinion. Some questions ask if you AGREE/DISAGREE with a statement. Others ask if something is ACCEPTABLE/UNACCEPTABLE to you. The numbers on the scale correspond to the opinions listed below.

- | | |
|---------------------|-------------------------|
| 1 STRONGLY DISAGREE | 1 UNACCEPTABLE |
| 2 SOMEWHAT DISAGREE | 2 SOMEWHAT UNACCEPTABLE |
| 3 SOMEWHAT AGREE | 3 SOMEWHAT ACCEPTABLE |
| 4 STRONGLY AGREE | 4 ACCEPTABLE |

Q4. Please answer each of the following statements as they apply to you. (Circle the number that best reflects your opinion for each statement; answer even if you have never performed breast self-examination.)

	Strongly Disagree		Strongly Agree	
A. For me, performing breast self-examination causes pain or discomfort:	1	2	3	4
B. For me, performing breast self-examination causes embarrassment:	1	2	3	4
C. For me, performing breast self-examination is inconvenient:	1	2	3	4
D. For me, performing breast self-examination involves thinking about the possibility that I may have breast cancer:	1	2	3	4
E. If breast cancer were found in me, it would lead to surgery resulting in a change in my physical appearance:	1	2	3	4
F. If breast cancer were found in me, it would lead to radiation treatment or chemotherapy:	1	2	3	4





13036



Q5. Please answer each of the following statements as they apply to you. (Circle the number that best reflects your opinion for each statement; answer even if you have never performed breast self-examination.)

	Unacceptable		Acceptable	
A. For me, the discomfort of a breast self-examination is:	1	2	3	4
B. For me, the embarrassment of a breast self-examination is:	1	2	3	4
C. For me, the inconvenience of a breast self-examination is:	1	2	3	4
D. For me, thinking about the possibility that I may have breast cancer is:	1	2	3	4
E. If breast cancer were found in me, surgery resulting in a change in my physical appearance would be:	1	2	3	4
F. If breast cancer were found in me, radiation treatment or chemotherapy would be:	1	2	3	4

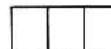
Q6. Please answer each of the following statements as they apply to you. (Circle the number that best reflects your opinion for each statement; answer even if you have never performed breast self-examination.)

	Strongly Disagree		Strongly Agree	
A. Friends or neighbors recommend I perform breast self-examination:	1	2	3	4
B. My husband/partner recommends I perform breast self-examination:	1	2	3	4
C. Other relatives/family recommend I perform breast self-examination:	1	2	3	4
D. My doctor, nurse practitioner, or physician's assistant recommends I perform breast self-examination:	1	2	3	4
E. The media (newspapers, magazines, TV) recommend I perform breast self-examination:	1	2	3	4





13036



Q7. Please answer each of the following statements as they apply to you. (Circle the number that best reflects your opinion for each statement.)

	Strongly Disagree		Strongly Agree	
A. Generally speaking, I try to do what my friends or neighbors recommend I should do:	1	2	3	4
B. Generally speaking, I try to do what my husband/partner recommends I should do:	1	2	3	4
C. Generally speaking, I try to do what my other relatives/family recommend I should do:	1	2	3	4
D. Generally speaking, I try to do what my doctor, nurse practitioner, or physician's assistant recommends I should do:	1	2	3	4
E. Generally speaking, I try to do what the media (newspapers, magazines, TV) recommend I should do:	1	2	3	4

Q8. My risk of getting breast cancer is:

- ☐ Very low
- ☐ Low
- ☐ Moderate
- ☐ High
- ☐ Very high

Q9. How long has it been since you last performed a breast self-examination?

- ☐ Within a month
- ☐ 1-3 months
- ☐ 4-6 months
- ☐ 7-9 months
- ☐ 10-12 months
- ☐ Over 12 months
- ☐ I have never performed a breast self-examination.





13036



Q10. Please list all the factors that encourage you to perform breast self-examinations (motivators).

Q11. Please list all the factors that discourage you from performing breast self-examinations (barriers).

Q12. What is your usual source of medical care?

- ☐ Military hospital or clinic
- ☐ Civilian hospital, clinic, or provider's office
- ☐ I do not have a regular source of care.

Q13. Which of the following do you consider your regular provider?

- ☐ Doctor (M.D. or D.O.)
- ☐ Nurse practitioner
- ☐ Physician's assistant
- ☐ Other



13036



13036

--	--	--

Q14. If you consider your doctor as your regular provider, please select the type of doctor you usually see.

- ☐ Obstetrician-Gynecologist (ObGyn)
- ☐ Internist (Internal Medicine)
- ☐ Family Physician (Family Practice)
- ☐ Surgeon
- ☐ Don't know
- ☐ Other
- ☐ I don't see a doctor as my regular provider.

Q15. In the last 12 months, have you had a (please circle one answer for each item)

- | | | |
|---------------------------|-----|----|
| A. Flu shot | Yes | No |
| B. Dental exam | Yes | No |
| C. Pap smear | Yes | No |
| D. General physical exam | Yes | No |
| E. Blood cholesterol test | Yes | No |
| F. Mammogram | Yes | No |

Q16. What is your age?

--	--	--

Q17. Please give your/your sponsor's rank.

--	--	--	--

Q18. Please give your/your sponsor's branch of service.

- ☐ Army
- ☐ Navy
- ☐ Air Force
- ☐ Marines
- ☐ Coast Guard
- ☐ Public Health Service
- ☐ Other

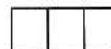
Q19. What is your beneficiary category?

- ☐ Active duty member
- ☐ Reserve member
- ☐ Wife
- ☐ Daughter
- ☐ Mother
- ☐ Retiree
- ☐ Department of Defense employee
- ☐ Other





13038



Q20. Are you employed at this time?

- ☐ Yes
- ☐ No

Q21. Please indicate your marital status.

- ☐ Married
- ☐ Divorced
- ☐ Separated
- ☐ Widowed
- ☐ I have never been married.

Q22. What is the highest grade or year of school you have ever finished?

- ☐ 8 years or less
- ☐ 9-11 years
- ☐ 12 years (high school graduate)
- ☐ 13-15 years (some college or technical school)
- ☐ 16 years or more (college graduate or graduate school)

Q23. What do you consider to be your race?

- ☐ Asian/Pacific Islander
- ☐ Black/African American
- ☐ White/Caucasian
- ☐ Hispanic
- ☐ American Indian/Native American/Aleut/Eskimo
- ☐ Other

Q24. Which of these income categories comes closest to the total yearly income for your household from all sources?

- ☐ Under \$10,000
- ☐ \$10,000-\$19,999
- ☐ \$20,000-\$29,999
- ☐ \$30,000-\$39,999
- ☐ \$40,000-\$49,999
- ☐ \$50,000 and over

Thank you for your participation. Please use the additional paper for any comments or questions about this questionnaire or breast self-examination.

