KNOWLEDGE OF BREAST SELF-EXAMINATION AND OTHER DETERMINANTS RELATIONSHIP ON THE SELF-RATED HEALTH STATUS OF ELDERLY WOMEN

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
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The Ohio State University
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ABSTRACT

An urgent need exists to reduce elderly women’s risk for breast cancer by promoting a health behavior that could lower this threat. The knowledge of breast self-examination could represent a health behavior that leads to the detection of advanced breast cancer and could influence elderly women’s self-rated health status.

The focus of this study was to determine if the knowledge of breast self-examination (BSE) as an adaptive health behavior can influence the self-rated health status of elderly women. Additional factors were also considered for the extent of their potential influence on an elderly woman’s estimate of health.

The purpose of this research was to study the relationship of breast cancer risk, knowledge of BSE, environmental press, and individual competence factors on the self-rated health status of women, age 75 years and older, residing in a group of assisted living facilities. This study looked at whether BSE knowledge could be a significant contributor to these women’s self-rated health status.

This research was conducted with a quasi-experimental design and used random assignment to place assisted living facilities in either treatment or control groups.
On the participant level, older women were provided with their risk of breast cancer prior to the intervention. In addition, the experimental group of older women received BSE instruction and then 8 weeks later were surveyed as to their health. Likewise, the control group provided the same data, except BSE instruction was withheld.

A t-test was done to check for differences between the groups as well as a correlation to gauge relationships between the independent variables and the dependent variable for each of the groups. Finally, a step-wise linear regression was preformed to find which of the independent variables best explained the most variance in the dependent variable for each of the groups.

BSE knowledge was shown to contribute statistically to the experimental older women’s self rated mental health scores. Independent activities of daily living were statistically significant for both groups at explaining variance in their physical health scores. Independence also was indicated as being important in explaining variance in the mental health score of the experimental group.
Dedicated to my mother and her battle against breast cancer
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CHAPTER 1

INTRODUCTION

INTRODUCTION TO THE STUDY

Elderly women’s longevity can be threatened by the delayed diagnosis of breast cancer. Older adults’ ability to assess their health has been explored but the need to obtain more measures of health status in subgroups of the population has been recommended (Andresen, Rothenberg, and Zimmer, 1998). Therefore the focus of this study was to determine if the knowledge of breast self-examination (BSE) as an adaptive health behavior could influence the health status of elderly women. Other factors were also considered since they could also contribute to longevity. BSE is a health behavior that encourages early detection and can be provided to elderly women who may be residing in assisted living facilities. Ultimately the knowledge of BSE as a detection method, in combination with other health factors, could transcend many barriers to contribute to the added health and productivity of elderly women.

BACKGROUND OF THE PROBLEM

During the 20th century, many medical advances have impacted the ability of humans to resist disease and to effectively age. The oldest-old (persons age 85 and older) comprise the fastest growing segment of the United States population (Rowe
and Kahn, 1998). Breast cancer compromises effective aging for women and was recognized early in the last decade as the leading cause of death for those over 55 years of age (Forrest, 1990). Lowering the incidence of advanced breast cancer in elderly women could improve their longevity. Unfortunately with the dramatic rise in the rate of breast cancer for American women after 55 years of age, preventative health strategies are needed to specifically address this threat (Abraham and Seremetis, 1997). Capitalizing on the fact that US women are twice as likely as men to seek preventative health strategies (Gannon, 1999), information about BSE could be offered as an adaptive health behavior. Reducing the incidence of advanced breast cancer by having the knowledge of BSE and coupled with additional influences, could promote successful aging for elderly women.

STATEMENT OF THE PROBLEM

Breast cancer has been listed as the number two malignancy that led to death in elderly women (Abraham and Seremetis, 1997). As a result, an urgent need existed to reduce elderly women’s risk for breast cancer with a possible health behavior that could help in lowering this threat. The knowledge of breast self-examination as a health behavior to prevent advanced breast cancer in an elderly woman could influence longevity even if extenuating health issues existed.

As women live longer, they become more susceptible to chronic diseases. Many people live in a quite functional state with numerous chronic diseases such as diabetes, hypertension, and arthritis, while others often are completely disabled from stroke or other neurological disorders (Costanza, et. al., 1992b). Exploring the possibility of extending elderly women’s lives by preventing advanced breast cancer meant also acknowledging the variety of additional factors that impact health status. To advocate for a particular
preventative health behavior, it needed not only to address the increasing numbers of women who survive breast cancer, but also those who could live more successfully after their 80th birthday with associated health conditions (Costanza, et. al., 1992b).

The major issue with promoting BSE for elderly women, as a technique has been the need for continued research on delivery of technique and its relation to preventing advanced breast cancer (Masood, Edwards, and Arnold, 1996). The evidence that has been provided, demonstrated that BSE is a simple, low cost, noninvasive procedure acceptable to elderly women, which complimented increased use of mammography and clinical breast examinations in the likelihood of detecting breast cancer (O’Malley and Fletcher, 1987) (Abraham and Seremetis, 1997). The knowledge of BSE has not been researched as a health behavior that influenced elderly women to take a more active interest in the status of their health (Costanza, et. al., 1992b).

If elderly woman are at increased risk of breast cancer, and if promoting BSE as a preventative health behavior were possible, then what effect could this have on elderly women’s assessment of their health status?

PURPOSE OF THE STUDY

The purpose of this research was to study the association of breast cancer risk, knowledge of BSE, environmental press, and individual competence factors with the self-rated health status of women, age 75 years and older, residing in a group of assisted living facilities in Franklin County, Ohio. This study looked at whether BSE knowledge was the most significant contributor to a positive health status based on the data collected.
RESEARCH METHODS

This research was conducted with a quasi-experimental design and through random assignment; assisted living facilities were assigned to treatment and control groups. On the participant level, all older women were provided with their risk of breast cancer as a pretest. In addition, one group of older women received BSE instruction as the manipulated intervention and then 8 weeks later were asked to take a survey to gather data on their knowledge of BSE, environmental press, and individual competence and its impact on their self-rated health status. The control group was asked to provide the same exact data, except the BSE instruction was withheld until after the 8-week interval. This allowed for analysis of the relationship of the independent variable on the dependent variable.

STUDY VARIABLES

The dependent variable for this study was the self-rated health status of the elderly women selected for participation in assisted living facilities in Franklin County, Ohio. The active independent variable was knowledge of breast self-examination as a preventative health behavior and associated rival variables investigated were:

- The environmental press that is encountered as part of being a resident of an assisted living facility.
- The level of breast cancer risk for those elderly women who were residents of an assisted living facility.
- The individual competence of the elderly women residents of an assisted living facility.
Descriptive characteristics of the elderly women such as age and their last medical check-up by a physician were also collected.

DEFINITION OF TERMS

For the purposes of this research study, the following terms are conceptually and operationally defined as follows:

Assisted living facility refers to any group of home-like residential programs whose responsibility is to provide living space for older adults and have the capacity to care for people with disabilities on an as needed basis. In this study, the assisted living facilities were the surroundings in which the treatment was provided and the environmental press, competence, and risk of breast cancer were measured.

Knowledge of breast self-examination (BSE) refers to a preventative health behavior that encourages the routine evaluation by an individual of their breast tissue. The technique involved a monthly practice of using the fats pads of the first three fingers to try to detect any architectural distortion of the tissue bilaterally (Schiller, Henderson, and Remedios, 1999). It was operationally defined by the questions on The Health of Older Women survey that asked about their knowledge of the procedure. The five BSE questions were scored to provide a frequency score to indicate the level of the participant’s knowledge about the preventative health strategy.

Environmental press refers to the aspects of settings with which people continually interact that activates their needs and that can be challenging, neutral, or supportive. It was operationally defined as the frequency of scores from the eight questions that are included from the Sheltered Care Environmental Scale (Moos and Lemke, 1996). The questions asked respondents to rate their environment with a positive response
(“yes”) which received a rating of 1; a negative response (“no”), which received a rating of zero.

Health behavior refers to an individual’s attributes such as beliefs, expectations, motives, values, perceptions, and other cognitive elements; personality characteristics, including affective and emotional states and traits; and overt behavioral patterns, actions, and habits that relate to health maintenance, to health restoration, and to health improvement (Gochman, 1982). This was operationally linked to knowledge of breast self-examination as an adaptive behavior.

Individual competence refers to an individual’s cognitive and physical capacity to meet his or her own needs (Lawton, 1982). It was operationally defined by the mean score of 4 of the 7 items that were part of the Independent Activities of Daily Living (Lawton and Brody, 1969) and were included in The Health of Older Women survey. The response for the 4 items ranges from 1 (indicating no assistance required) to 3 (someone takes care of this task for you).

Risk assessment refers to the act of recording information that has an emphasis placed on the early detection of changes in the health status of the client for the purpose of preventing a more serious problem or disability. It was operationally defined as the composite score that is computed using the Gail Model for risk assessment of contracting breast cancer (Gail, Britton, and Byar, 1989). A five-year risk will be computed as a score greater or equal to 1.7%.

Self-rated health status refers to the subjective rating made by an individual about their health and their assessment of their physical and mental health well-being. It was operationally defined by the mental and physical health scores obtained from the
SF-12 (Ware, Kosinski, and Keller, 2002). Because there is great variety within the population of elderly women, it was important to properly describe the participants involved in this research effort. It is important to for elderly women to be discretely categorized. Neugarten is one of the first researchers to have categorized (both males and females) into subcategories of young-old and the old-old (elderly) (Neugarten, 1982). For the purposes of this study, the term elderly women was used to represent those women 75 years and older in age. Using this categorization of subjects allows this research to be more descriptive and easier to replicate. This demographic information included the following items:

In this study, age is referred to as the chronological age of each subject and this was measured by asking each respondent, “Please list your age for the purpose of this study.”

In this study, the length of time since the last medical check up with a physician was measured by asking each respondent,” When was your last medical check-up”.

THEORETICAL FRAMEWORK FOR THE STUDY

The health related quality of life (HRQL) model was proposed as a means to successfully characterize what patients have experienced as the result of medical care. It also provided important supplements to physiological and biological measures of health status (Wilson and Cleary, 1995). Wilson and Cleary built on the idea that a person’s ability to rate their health is a positive predictor of actual health status and that has been reported conclusively (Arking, 1998). HRQL proposes that health status is composed of concepts from multiple levels. The theorists attributed this to the fact that individuals, when asked to describe their health, usually recorded feelings stemming from their
behavior, social, and economic supports (Wilson and Cleary, 1995). In their original work, Wilson and Cleary conceptualized health status as including dimensions of physical functioning, social functioning, role functioning, mental health, and general health perceptions. They further collapsed these dimensions under the headings of characteristics of the individual and characteristics of the environment (Wilson and Cleary, 1995). The implication of their work was to provide a better understanding of the determinants of health status and develop strategies to not only identify risk factors but also to assist in modifying their associated characteristics.

Wilson and Cleary advocated the importance of measuring health status by using standardized instruments and a need for further studies that quantified these relationships. Considering elderly women, the hypothesis is that the self-reporting of health status would be a better predictor of mortality than objective measures of health. This ability of a person to evaluate their health was referred to in this study as self-rated health status.

Since elderly women are a heterogeneous subgroup of the population, examples of this variety is evidenced by looking at elderly women living in good health, very old women with functional disabilities living at home, and older women living in assisted living facilities. Each of these groups of elderly individuals will have different attitudes about their respective health (Gallo, Fulmer, Paveza, et. al., 2000). To discover what influences elderly women’s opinions about their health, it would be important to build on the HRQL model that theorized the necessity to integrate different domains of study (Wilson and Cleary, 1995). The two domains that they theorized as impacting self-rated health status were individual and environmental factors. There are some striking
similarities between Wilson and Cleary’s work and an earlier theory on the behavior of older adults posed by Lawton.

Lawton’s ecological model of aging, titled the Press-Competence theory, was an earlier description of an older person’s behavior as a function of the competence of that individual and the social and economic support provided by the environment (Lawton, 1982). Lawton’s theory on an aging individual’s behavior describes an older person’s adaptive response to a situation created by individual competence and environmental press. This theory is posed to explain the adaptive behavior of aging individuals.

Health behavior can also be thought of as an adaptive behavior. Health behavior has been defined as those personal attributes and cognitive elements and behaviors that relate to health maintenance (Gochman, 1982). Using the knowledge of a health behavior as the desired adaptive response to these influences provides a possible source that could impact self-rated health status.

The theoretical framework of this study used the commonalities of the HRQL model with descriptive overlap from the Press-Competence theory. Integrating these domains of influence under the common headings of individual competence and environmental press could map these variables to an adaptive health behavior, such as BSE knowledge and ultimately influence self-rated health status. HRQL as a model defines symptom status as an element of influence but in this context, it is better defined as risk assessment. The integration of these theories is diagramed in Figure 1.1.

In this context, the variable of environmental press as introduced by Lawton needs further description. A certain percentage of elderly woman find themselves in situations of assisted living, requiring them to adapt to that associated environment. If an
environment limits access to preventative health behaviors it could lead to advanced cases of breast cancer among elderly women. It could be theorized that as the environmental press of aging increases that the constraint of assisted living hampers efforts to adopt an adaptive behavior such as breast-screening practices that could reverse a trend of advanced malignancy. Adopting a health behavior could positively influence an elderly woman’s health status regardless of the susceptibility and the severity of breast cancer.

The final amendments to this theoretical framework were the two elements of the Health Belief Model (HBM). Susceptibility, severity, and perceived benefits are components of the HBM that better describe the potential symptom status of an elderly woman and provide risk assessment information to the elderly woman which may influence the desired adaptive behavior. HBM describes susceptibility as an individual’s perception of her risk of contracting a health condition and severity is defined as feelings concerning the seriousness of contracting the disease or of leaving it untreated (Strecher and Rosenstock, 1997). These components are included in the combined theoretical framework as a way of demonstrating the importance of including the risk of breast cancer in elderly women. It has also been shown that perceived susceptibility was a stronger predictor of preventative health behavior than compliance behaviors for treatment regimes (Strecher and Rosenstock, 1997). One of the hypotheses that has been put forward for future research is the notion that perceived susceptibility, under the state of high perceived severity, will be a strong predictor of intention to engage in health-related behaviors (Strecher and Rosenstock, 1997). Perceived benefits are an additional element that has been defined as a person’s opinion
of the efficacy of the advised action to reduce risk or seriousness of impact (Strecher and Rosenstock, 1997). This element is one that could help to explain the positive feedback that might occur from going through an adaptive behavior. These elements of HBM were therefore imported into the enhanced theoretical model for investigation with elderly women and their utilization of BSE. These additions are noted in Figure 1.1.

The strategy was to teach them breast self-examination as a means to monitor their breast tissue for changes indicative of the early stages of breast cancer. Using this approach, the study provided not only for an estimate of the information that older women possessed about BSE, but also its impact an elderly woman’s self-rated health status in combination with additional variables. The intent of this research was to capture the right combination of factors in conjunction with breast self examination to reverse the trend of advanced stage breast cancer diagnosis and at the same time positively influence their self-rated health status.

SIGNIFICANCE OF THE STUDY

The major reason for this research effort was to add to the body of knowledge concerning methods that could contribute to the lowering of advanced breast cancer diagnoses in elderly women. It is possible that new knowledge will result relating to the theory of self-rated health status and be made more specific to elderly women.

Demonstrating a positive effect of a preventive health behavior (BSE) on self-rated health status, with the findings of this study had the potential for the following policy changes:

- Increased preventative health strategies within assisted living facilities that are accessible and economical for elderly women such as BSE.
Figure 1.1. A Theoretical Framework Composed of Elements of the HRLQ, Press-Competence, and Health Belief Models.

The arrows displayed are used to indicate hypothesized directions of influence for the independent variables.
• The use of prevention health behaviors as a way to provide elderly women with a more active role in their health care (Costanza, Annas, Brown, et. al., 1992) while taking advantages of assisted living arrangements.

RESEARCH PROBLEM AND RELATED RESEARCH QUESTIONS

The problem addressed in this research study was:

Does knowledge about a preventative health behavior such as breast self-examination (BSE) contribute to the self-rated health status among elderly women?

It was theorized that BSE instruction would provide knowledge about this preventative health behavior and that it would positively influence elderly women’s perception of their health.

Additional questions that this research addressed are as follows:

• For those elderly women in assisted living facilities, what are the risks for breast cancer?

• Is the risk of breast cancer a determinant of their self-rated health status?

• To what degree does individual competence influence the level of self-rated health status for elderly women?

• To what degree does environmental press influence the level of self-rated health status for elderly women?

• Which of the independent variables contributes most significantly to self-rated health status?

It is important to note that an elderly woman’s self-rated health is developed within the realm of other influences. The inclusion of added variables of influence were attempted to assess their influence self-rated health.
LIMITATIONS

The threats to internal validity are listed as are the process used for dealing with each of them. The first was history and allowing the two groups to experience the same events prior to the post assessment provided a control for this phenomenon. Maturation was another internal validity threat and using mature subjects and minimizing the length of the study was an added control. The testing effect was limited, as the posttest assessment was only given once. Using a reasonably reliable and valid survey tool limited the threat imposed by instrumentation. Using the risk assessment tool to assure the similarity of the groups controlled selection bias. Using all the subjects who complete the risk assessment tool and the posttest assessment survey was used to control mortality. Using the same individual to administer the survey was a constant that controlled an implementation threat. Location was not an added factor because all subjects were situated in an assisted living environment. The issue of the number of subjects recruited for this research could also be a factor that could hamper the statistical power of results. The goal was to have at least 100 completed responses on the risk assessment tool; the number of responses on the post educational health status instrument would be 50 experimental responses compared to 50 control responses. For within group correlation analyses, statistical power is reduced. Selection bias could exist due to the fact that randomization of the subjects was not possible with this study. The most problematic threat to internal validity was the interaction of selection and maturation, etc. This group of threats existed due to selection and the inability to randomize the participants. Efforts to select assisted living facilities that were comparable by residential characteristics and
then randomly selecting the group of facilities to the treatment and control group helped
with this potential threat.

The most substantial threat to external validity with this study design was the
interaction of testing and treatment. It was plausible that using a risk assessment tool
as a pretest might have an effect on the intended outcome of the study. It is for this
reason that the risk assessment phase as a variable was built into the research design to
account for its effect on the dependent variable. Selecting the subjects and
demonstrating the results over a variety of conditions will handle the interaction of
selection and treatment. Multiple treatment interference was also possible since it might
not be know if a subject has experienced a similar treatment and contaminated the study.
Generalizing the results of this study is always subject to the ability to reproduce these
effects with other groups of older women in other assisted living facilities.
CHAPTER 2

THE LITERATURE REVIEW

INTRODUCTION

The significance of this project was that little research had been specifically conducted on an elderly woman’s self-rated health status. Examining the related work in this area framed the efforts of proceeding with a project of this nature. One of the most intriguing studies was one that proposed a model to describe some of the factors that would influence a person’s ability to describe their health status. Wilson and Cleary proposed a model that helped to demarcate the areas of physiologic support, social support, economic support, personality motivation, and psychological support as contributors to a person’s overall ability to rate their health (Wilson and Cleary, 1995). Their research isolated factors that can be assigned to broader categories of study. However, this line of research did not specifically address elderly women. It also has not been supported with research that includes interventions aimed at influencing a person’s assessment of their health.

In an effort to advance this area of inquiry, a model was proposed that builds on Wilson and Cleary’s work and categorizes the constructs of influence. The new model also demonstrated the variables under investigation and is included as Figure 2. This new
Figure 1.2. Factors Influencing Older Women’s Self-Rated Health Status: A Research Model.
model attempted to collapse Wilson and Cleary’s categories of influence under the headings posed by Lawton and renamed these constructs as individual competence and environmental press (Lawton and Brady, 1982). By using these broader categories that were developed to address older persons, the model could be more descriptive of the influences on elderly women’s ability to self-rate their health status. The model diagrams possible variables and their impact as the elderly woman was involved and processing an educational intervention.

The remainder of the chapter that follows critically reviews contemporary literature regarding elderly women’s health status in light of factors that could influence their ability to combat breast cancer. The work of Wilson and Cleary is closely related to the research that was conducted by Domarad (Domarad, 1992). In her work, elderly women’s views of their own health were intertwined with efforts to provide breast cancer prevention. In the Domarad study, she looked at five variables that could be collapsed into these same broad categories as Wilson and Cleary. Her research involved looking at variables that affected elderly women’s ability to comply with breast screening criterion. The five variables that she used were: age, social support, self-esteem, health motivation, and attitudes (Domarad, 1992). The research design of this study was descriptive in nature and therefore assisted in identifying these variables so that additional quantitative research can be pursued.

Similarities between Domarad’s variables and those of Wilson and Cleary’s are noted and could be helpful to advance the quantitative investigation of a new group of elderly women. The review of pertinent studies showed that a few studies have looked at
some of these individual variables however they had not been able to tie all the factors together.

In the section that follows, recent studies are reviewed for added information in an effort to explore the elements of this model. Initial sections address each component of the research model such as: risk assessment, individual competence, environmental press, self-rated health status, and the use of breast self-examination. The review concludes with a summary of existing literature, followed by a more detailed review of the theoretical basis for this research. In conclusion specific questions are suggested by the review and subsequently examined by this dissertation.

REVIEW OF PERTINENT LITERATURE

Elderly women are interesting research subjects due to the fact that they are generally afforded longer life and that longevity often requires adapting to a life that includes illness as a reality. There is slow decline in functional capacity of most body systems resulting from physiological or nonpathological age changes. Whereas the younger patient has but a single diagnosis, multiple diagnoses are usual in older women (Lesnoff-Caravaglia, 1984, pp.11-20). The risk of advanced breast cancer as a diagnosis is one of elements of this research and the first variable of the research model to be reviewed as it relates to the self-rated health status of elderly women.

Risk Assessment

The risk of breast cancer in elderly women was a significant threat with estimates indicating that 48% of women with breast cancer are over the age of 65 years (Wanebo et. al., 1997). With this high occurrence of breast cancer in elderly women, it is understandable that it is the leading cause of death in women 55 to 74 years of age
(Guillory, 1994) (Kimmick and Muss, 1997). To better understand the risk and to raise awareness among elderly women of this disease, it was important to review the research that has been done in this area.

Since elderly women are under the erroneous assumption that they are at a lower risk for breast cancer, they tend to develop the disease in more advanced stages prior to diagnosis. Kantor and Houldin (1999) noted that tumors once detected in elderly women are usually less aggressive but due to the delay in diagnosis, the tumor tends to be of an advanced stage of malignancy on presentation and needs more aggressive intervention.

In a very recent study, researchers conducted a retrospective cohort study on a population of 12,000 elderly (>75 years of age) women. They found that this group had larger and more advanced tumors than women whose cancer was detected between the ages of 69 to 74. (Randolph, Goodwin, Mahnken, et. al. 2002).

**Barriers that promote risk in elderly women**

The risk of breast cancer for elderly women is made more complex by policy statements that favor less frequent screening for breast cancer. In 1993, Medicare mandated that women older than 65 should only receive a mammogram every other year, thus creating a situation of elevated risk for some elderly women in delaying their opportunities for breast cancer detection (Wanebo et. al., 1997). The American Geriatrics Society currently recommends screenings every one to two years until age 75, and every two to three years afterwards in women with estimated life expectancy of at least four years or more (American Geriatrics Society, 1999). These kinds of policy statements on limiting access to medical screening procedures may be contributing to
physicians’ lack of confidence in recommending these kinds of preventative health strategies for elderly women.

A trend may be developing among primary care physicians concerning their reluctance to recommend preventative health behaviors for their older patients. In a study of Boston physicians, 482 doctors were surveyed concerning reasons for recommending screening mammography for their elderly patients. Results were that 94% of physicians polled had the opinion that their female patients 65 to 74 years old should have mammography. However, women age 75 to 84 years were only recommended 79% of the time for annual mammography. The conclusion was that physicians were using implicit judgments about quality of life expectancy to determine breast cancer screening practices (Marwell, Freund, and Barry, 1996). In a 1990 research study from Long Island, New York, physicians were asked about their preferences for elderly women to be referred for screening mammography. They reported being less likely to refer elderly female women (those over 75 years of age or older) for screening mammography. However cost was not the factor dissuading the physicians; it was their concern over the patient's state of physical health (Burg and Lane, 1993). In 1997, a group of 100 physicians in England were asked about performing clinical breast exams on elderly patients (Haigney, Morgan, King, and Spencer, 1997). Of the group surveyed, only five physicians advocated doing a clinical breast exam on a woman over the age of 50 years. Since some physicians seem to be questioning the usefulness of referring elderly women for mammography and clinical breast exams, it may be necessary to adopt an alternate health behavior as the next strategy to promote early detection.
One of the studies that examined physician influence and its impact on the risk of breast cancer among elderly women was a qualitative research effort. Focus groups were formed that consisted of three groups, one consisted of women aged 65-75, another 75 and older, and a group of physicians to discuss the way to influence changes in medical practice and also methods to educate elderly women. Some of the anecdotal comments that were offered by the older women’s groups related to their fear, anxiety, and avoidance of the issue of breast cancer (Zapka and Berkowitz, 1992). With regard to BSE as a means for screening the breast tissue for disease, they indicated their own resistance to adopt the health behavior (Zapka and Berkowitz, 1992). Some overarching themes from this study in all groups were that if the physician didn’t recommend the screening of breast tissue for cancer, it was considered to be unimportant and coupled with access issues for elderly women to obtain screening procedures made it not worth the effort (Zapka and Berkowitz, 1992). These group attitudes are in conflict with the published incidence of breast cancer in elderly women; therefore their risk of breast cancer is troubling. This study was small in scope and therefore cannot be generalized beyond those involved in the study. However the comments are helpful in establishing some areas for further research in the area of risk of breast cancer in elderly women.

Besides physician support, some additional barriers that continue to keep elderly women from adopting screening behaviors are lack of accessibility, lack of information, and competing concurrent medical conditions (Kimmick and Muss, 1997).

Comorbidity is a unique circumstance that impacts the elderly woman who is at risk for breast cancer. It has been estimated that 80% of people over the age of 65 have at least one chronic disease (Kimmick and Muss, 1997). Since the incidence of chronic
disease increases with age, it is possible that the elderly woman would have more than one medical problem to consider. Within a population of elderly women, breast cancer may be slowly growing in conjunction with other medical conditions. As the number of major comorbid conditions increases, the risk of death from all causes, independent of age and stage of disease, increases (Kimmick and Muss, 1997).

Lowering risk and increasing life expectancy

Since additional medical conditions and physician indifference are difficult to address, it became the focus to disprove the myth that elderly women don’t benefit from breast cancer screening and treatment. In an article that investigated the reasons for screening elderly women, physicians Oddone, Feussner, and Cohen, (1992) promoted a model for making the decision as to which patients should be offered medical breast cancer screening. Their suggestion was screening should be offered to those elderly women who had the best anticipated life expectancy. Their recommendation was to screen women who are expected to live at least 5 years before dying from a nonbreast cancer cause. Those authors acknowledge that an accurate model of survival does not exist but the majority of elderly women would fall into this recommended category They also gave guidelines that an average life expectancy is 12 years for a 75-year-old woman and 7 years for an 85-year-old woman (Oddone, Feussner, and Cohen, 1992).

In a study conducted in that same year, 20 groups of women separated into age categories were prospectively followed to determine whether screening strategies were able to extend these women’s lives (Mandelblatt, Wheat, Monane, et. al. 1992). These women all had varying degrees of comorbid conditions that complicated their health.
What was discovered was that this group of women, 65-69 years of age, collectively demonstrated an extension of life by 617 days. Those women who were over the age of 85 years received a benefit of 178 days of life due to screening procedures. This study was based on some assumptions about a patient’s diagnosis that might make their situation unique. Although the decision tree model that was used in this research worked effectively with this population, it may have different results with other sample groups. The most important finding that is promoted by this study is that elderly women should not be inhibited or blocked from reducing their risk of breast cancer.

Similarly, in a descriptive research study conducted on 95 women over the age of 74, their medical records were studied retrospectively over the period of 1976-1985 at The University of Texas, M. D. Anderson Cancer Clinic. Their research results indicated that the majority of elderly women whose breast cancer had been treated appropriately remained cancer free and enjoyed a good quality of life (Singleton, Shallenberger, and Guiney, 1993). These kinds of successes should emphasize the importance for physicians to recommend screening behaviors for their elderly patients to protect them from breast cancer.

Continuing to address the barrier of elderly women having a limited life expectancy, a large study was retrospectively conducted on elderly women with breast cancer to look at their stages, surgery, and survival. This study was conducted using the data on over 125,000 women diagnosed from 1973-1984 to look at the issues of advancing age on breast cancer survival (Yancik, Ries, and Yates, 1989). This quantitative study used the information obtained through the National Cancer Institute’s database and the authors sifted through data on disease stages, surgery, cancer type, and
survival times. The study found that surgery was offered less to elderly women with breast cancer and those who presented with breast cancer had advanced disease. Of those who did obtain a medical intervention, data supported the fact that elderly women did as well as younger women in survival time. Those elderly women who had advanced disease did not compare as well and this made the authors advocate for aggressive measures for elderly women at risk for breast cancer. Due to the number of participants and statistical significance of their results, this study stands as one that advocates strongly for breast cancer screening for elderly women.

Providing accurate information about breast cancer risk

Dealing with a possible biased attitude by physicians against screening for breast cancer is one issue but also providing information to elderly woman is a challenge in lowering the risk of this disease. A Canadian study was initiated to isolate some of the issues that contribute to a high risk of breast cancer among aging women. The hope was to measure quantitatively the risk among a randomly chosen group of 412 women over the age of 40. The intent was to learn about this group’s knowledge and estimated risk for breast cancer. Telephone interviews were done through random digit dialing and therefore helped to make this study one that could be generalized to a larger population. Interestingly, in this study, the elderly women reported that they believed themselves to be at low risk for breast cancer (Herbert-Croteau, Goggin, and Kishchuk, 1997). Data from those older respondents demonstrated a belief that they were at lower risk than those women who were under 50 years of age. Another finding within this group was that those who had participated in breast screening procedures reported that they were more apt to continue to participate in monitoring their risk for breast cancer. These results are
significant since the strength of the study allows for drawing conclusions about educating women on their true risk of breast cancer and the value of getting them to participate in screening procedures to promote reducing their risk. One of the problems with this study is that it was unclear which of the participants had received some form of prior information about their risk of breast cancer. Some of the respondents could have been unduly biased prior to the survey.

In a qualitative study, 20 women, ages 66 to 94, diagnosed with stage I or II breast cancer, were interviewed to better understand their experiences and perception of risk. Some key comments surfaced in this study and they were that these women felt very rushed by their physicians. They often felt that their physicians did not allow them time to ask questions about their concerns. Interestingly they also felt that written material that they had been given was often not adequate and they preferred to have written material about risks presented and allow for time to discuss this with “those who know” (Crooks, 2001). Although this study is small, it provides rich detail about these elderly women’s experiences. It also brings out the importance of providing sensitive information about risks and treatment options in a manner that allows for conversation and discussion.

In a similar type of study, 26 African American older women ages 40-65 years were placed in a focus group in order to find out the issues that were preventing older women from reducing their risk of breast cancer through screening practices. This diverse group was composed of teachers, service workers, and unemployed women. Again these women discussed knowing about breast cancer awareness programs but they resisted participating because they did not understand their risk for breast cancer. They
were under the misunderstanding that breast cancer was a “white woman’s disease” (Phillips, Cohen, and Moses, 1999). This qualitative study again echoes the previous studies in the misunderstanding that may exist among groups of older women as to their specific risk for breast cancer. Since these comments only apply to these groups, it points to a general trend that includes the risk of breast cancer as a variable and determining its effect on self-rated health status and its possible association with BSE. Perceived benefits of risk assessment

A perceived benefit of risk assessment was mentioned in reference to the Health Belief model. Although studies of this component are difficult to locate, a few authors advocate this component as a side benefit of risk assessment. As part of a survey done by Irwig et. al. (1991), it was noted that the women surveyed seemed to demonstrate an attitude of compliance for screening procedures due to perceived benefits and overcoming barriers through the knowledge they possessed. In a qualitative study of older women involved in a focus group discussion about risk factors for breast cancer, it was noticed that the older participants seemed more “upbeat”. The enormous life changing events of the 65-75 year span seemed to have given them the survival attitude. For these focus group elderly women, they experienced a perceived benefit from attempting to reduce their risk and live life one day at a time, and to take charge (Zapka and Berkowitz, 1992). In an opposing commentary, Kimmick and Muss (1997) stated that in women over age 85, the benefit of screening mammograms might be questionable due to the benefit being outweighed by the anxiety and discomfort associated with this type of screening procedure.
Estimating the risk of breast cancer

The most reliable method that has been presented to estimate mathematically the risk of each woman for breast cancer is a model that was constructed by Gail et. al,. This model was constructed based on the relative risks for various combinations of factors that were developed from case control data supplied by the Breast Cancer Detection Demonstration (BCDD) project (Gail, Brinton, Byar, et. al., 1989). Their work was derived from women who participated in the BCDD project and who tended to return for periodic examinations. They were able to collect data and risk factors for 284,780 women. The analysis of this data was based on 2,852 white cases and 3,146 white controls for which all information was known for the variables in the model. The analysis focused on familial, reproductive, menstrual, and medical history variables and of those variables, it was found that a family history of breast cancer, a late age at first childbirth, early menarche, and multiple previous breast biopsies became the primary factors in the model. The model provides separate risk ratings for women under 50 and also for those over 50 years of age. The model subdivides the probability of developing breast cancer into three problems: 1. Determining which risk factors are important and estimating the relative risk for a subject with a given constellation of risk factors at a given age compared to a subject without the identified risk factors; 2. Estimating the baseline age-specific breast cancer hazard rate, which is the rate for a woman without identified risk factors; and 3. Projecting the long-term probability of developing breast cancer on the basis of consideration of competing risks and the results on relative and baseline hazard (Gail, Brinton, Byar, et. al., 1989). The strength of this research both in its design and its statistical power makes it the choice to use as a means of ascertaining
the risk of the participants in a study of elderly women that might be followed over a period of time.

In planning a possible intervention to address these risk factors, it was important to find out the specific breast cancer incidence in the location of the potential study. Nationally, the Healthy People 2010 recommended objective is to reduce the breast cancer rate and the goal is to improve by 20% (US Dept of HHS, 2000). In Ohio, breast cancer is the most common type of cancer diagnosed among women and has the second highest death rate (ODH, 2002). To begin to address the risk factors of a group of elderly women in the target area, these goals will only be realized through a better understanding of other factors that motivate and affect an individual elderly woman’s health status.

The risk for breast cancer is significant for elderly women and the key risk factor is age (American Geriatric Society, 1999). Increased levels of risk may be attributed to attitudes that stem from misinformation on the part of both physicians and elderly women. The Gail model for risk assessment provides a quantitative method to calculate the risk of breast cancer and to educate elderly women on the benefits of using BSE as preventative health strategy to reduce their risk of breast cancer.

**Individual competence**

The next variable that was included in the research model was individual competence. The term individual competence is referred to as an individual’s cognitive and physical capacity to meet his or her own needs (Fonda, Clipp, and Maddox, 2002). Using the construct of individual competence helps to capture the influence that was expressed by Wilson and Cleary and by Domarad. To better understand the influence of psychology and physiology on health, these components were included in the model as
understood contributors to the variable labeled as individual competence. Previous research points to the belief that psychology and physiology have an effect on self-rated health status. These factors have roots that stem from separate areas of research. In order to measure health status, the psychological set of influences can be examined from a social science paradigm (Wilson and Cleary, 1995). The clinical paradigm however yields information about the set of biological and physiological factors (Wilson and Cleary, 1995). Examples of these factors would be symptoms such as dizziness or pain. The importance that an individual places on these factors will have a distinct effect on the way that they would report their health status. For any individual, certain symptoms are more burdensome than other deficiencies. Individuals who focus on a burdensome symptom will often prefer not to have to put up with that symptom even if they may have to put up with others. These constructs of physiologic and psychological influence on an individual’s behavior can be described within Lawton’s concept of individual competence.

Lesnoff-Caravaglia is one of the more outspoken authors on elderly women’s physical and cognitive burdens when she describes the physical stigma of aging. She describes the cognitive and physical challenge of trying to keep a youthful appearance:

“Few people realize the devaluing process aging has upon women and their interpersonal relationships. Knowing that society, in general, harbors a negative view of the older woman, is it any wonder that older women hesitate to make new friends and often behave in a demanding or irritable fashion? Dressing up, making up, and dying your hair does little to bolster your self-esteem. The energy spent in the cover-up detracts from the joy of existence and has an eroding effect upon the human interaction (Lesnoff-Caravaglia, 1984).”

An alternate method of trying to describe the cognitive challenges of aging on the elderly woman has been posed by the continuity theory. According to this theory,
individuals tend to maintain a consistent pattern of behavior as they age, substituting similar roles for lost ones and maintaining typical ways of adapting to the environment (Hooyman and Kiyak, 2002). Continuity of behavior among elderly women could be challenging when for many their cultural identity continues to be reinforced as being abnormal and obsolete (Gannon, 1999). Elderly women’s cognitive well-being is actually believed to be enhanced due to changes in their roles. For some elderly women, aging can bring about a gain in control. One of the indicators that this may be true is that elderly women have been shown to be less depressed with their loss of identity (Gannon, 1999). This may seem odd; however as a younger woman, many were responsible for families and had little control over their eating, sleeping, working, and leisure. As old age approaches, the role changes from being responsible for the care and feeding of others to being responsible for self, actually signifying more control (Gannon, 1999).

Building on the idea that elderly women gain cognitive control of their lives with aging, several studies explored the concept of a health locus of control. One such study was conducted over a six-year period. This longitudinal study was conducted on a group of 365 older adults. Of that group, the elderly women were noted to have a high sense of control over their lives and were more prone to self-care behaviors and health promoting activities (Wallhagen, et. al., 1994). This study is pivotal in pointing to the importance of cognitive control and the connection with health status and healthy behaviors.

In a compatible study, researchers looked at three age groups of women to determine the most compliant to practicing BSE. In this study, the age groups were
divided into group 1 (ages 20 to 29), group 2 (ages 30-39), and group 3 (ages 40 and older). What the research found was that those women ages 40 and older were 55% compliant at conducting BSE according to the American Cancer Association guidelines (Cagle, 1993). This is in comparison to only 20 to 25% of American women who are believed to comply with the practice of BSE (Cagle, 1993). Perhaps the increasing age of the participants signified an increase in a sense of control over their life and a desire to increase their health status. Unfortunately these kinds of conclusions are hard to draw, as this represents the next step forward in the research with elderly women and their ability to self rate their health.

It is very difficult to separate the cognitive changes from the physical changes associated with aging. One possible example of the cognitive and physical change interplay, is that elderly women can experience both physical and emotional stress associated with the higher threat of cancer. Steinhauer and Auslander (1984) found that while many women could, ordinarily, take hormone treatments to help stabilize physically induced depression caused by hormone imbalances, those women who have had cancer of the female organs are often urged to reduce estrogen intake. Not only do these women suffer from the normal depression associated with major surgery, often mutilating, but they also cope with possible depression because of an uncertain future in terms of cancer reoccurrence.

Other physical capacity issues for elderly women are strength to perform regular daily activities. Age 75 has become a significant marker for older adults who need assistance with daily tasks. After age 75, about a third of elderly women report that
they need assistance with their activities of daily living (ADLs) (Teaford and Zavotka, 1998).

In a recent study of women age 20 to 89 years of age, 217 women were measured for physical activity, limb strength, and muscle mass and, as expected, the study group showed a decrease in strength which may be related to limited physical activity and decreasing muscle mass as a function of increasing age (Hunter, Thompson, and Adams, 2000). This study was conducted on independent dwelling Australian women and so it may be an area of further study for elderly women who are dwelling in assisted living situations with a loss of physical strength and its effect on health status.

Measurement of elderly women’s individual competence is composed of multiple areas of functioning. To be able to capture the essence of some of these factors, an instrument is needed to properly gauge an elderly woman’s ability to complete daily physical and mental activities. The Instrumental Activities of Daily Living (IADL) scale was devised to measure individual care as well as mobility and mental functioning (Eustis and Patten, 1982). The IADL scale is based on seven criteria and each is graded on a three level scale of independent, assistance needed, and dependent (Lawton and Brody, 1969);(Ernst and Ernst, 1984). This survey can be completed either with the older adult or with an informant (nurse, caregiver, or family member). This scale would be useful in trying to obtain a quantitative score for individual competence of the elderly women in a proposed study.

It is hard to separate the interrelationship between physical and cognitive changes of aging and their contribution to the competence of the individual. Continued research
is needed especially for elderly women in order to better understand competence’s contribution to the aging process.

**Environmental Press**

Lawton (1982), in his extensive research of older people, developed a significant body of research around the theory of the relationship between a person’s competence (cognitive and physical capacity) and the environment that supports that individual. Some relevant research that helps to build on this idea is reviewed within this section. For this research, environmental press was a construct that was defined as the aspects of settings, in which people continually interact, activating their needs. The environments can be challenging, neutral, or supportive (Fonda, Clipp, and Maddox, 2002).

One of the early studies to examine the effect of assisted living environments on the elderly was one that was conducted on a group of seniors that had been moved from an older facility to a newer one. Researchers were interested in observing the effects of the change in environments and its influence on health of the individuals (Markus, Blenkner, Bloom, et. al., 1970). A population of 199 residents was interviewed and their records reviewed prior to the move from the older facility. Longitudinally, this group was followed and there appeared to be an increase in the number of deaths among those residents who were moved from one environment to the other. The variables that seemed to be the best indicators were deteriorating mental status (cognitive) and physical capacity. This study defined the variables that are considered as part of individual competence and related them to the stress of an environmental change. The limitation to this study was that the number of elderly women with respect to the sample of residents
was a small percentage therefore placing limits on the kinds of statements that could have been used to generalize to a population of elderly women.

A more recent study, that compared the health of elderly adults living in an assisted living facility to those in the community, demonstrated a different result. This longitudinal study was conducted with the records of 92 residents that moved into an assisted living facility in 1993 (Fonda, Clipp, and Maddox, 2002). The result of their analysis comparing residents of similar socio-economic and health status, was that residents of the assisted living facility were more likely to be highly functional than those in their homes. This study group appeared to benefit in competence within their assisted living environment compared to those living in the community. Again in this study women and ethnicity were not representative enough to draw good conclusions for elderly women as a population. It is also possible that other factors may have caused the residents to be different than the community control group.

In a compatible study of assisted living environments, researchers investigated the difference between residents in assisted living from those in a nursing home environment that existed on the same campus (Pruchno and Rose, 2000). This work looked at 158 residents upon admission to either environment and tracked their health at 4, 8, and 12 months where both face to face interviews and data collected from their medical records were used. This study revealed that no matter the environment, the residents of either facility had similar health outcomes. This would seem to indicate that environmental press was not a contributor to health status. However, when the assisted living residents were allowed to provide their self-rated health, it was higher than that provided by the rest home participants. In this case objective measures of individual
competence were not equated to self-rated health. This provides some reason to reexamine this phenomenon with older women participants.

Another study done on elderly residents in a Wisconsin set of retirement facilities uncovered a trend among residents to hide from their caretakers. This behavior was reasoned to be related to residents fear that declining individual competence might threaten their ability to remain living independently in the facility (Bowers, 1989). Given that this data was collected on residents from 19 different facilities, it is reasonable to believe that this phenomenon points to a relationship between individual competence and environmental press that can ultimately affect an elderly person’s health.

A related study of environmental press in assisted living facilities was conducted using a variety of variables that might affect a population of elderly adults living in several facilities. The facilities in this research were selected at random and ranked by size. Among those facilities, elderly adults were also selected at random to participate in a survey about the kind of stress that they were under in their living situation (Mitchell and Kemp, 2000). Using several different scales to assess different variables this well designed study demonstrated that a cohesive and supportive assisted living environment was statistically linked to a higher quality of life among the residents. This significant study paves the way to looking at elderly women specifically and trying to find a similar relationship. The environmental scale that was employed was the Sheltered Care Environment Scale (Lemke and Moos, 1996). From this scale of eight subscales, four of the most relevant were chosen for the study of quality of life. The Sheltered Care Environment Scale (SCES) is important because it helps in assessing a facility’s environment by asking the residents about the unusual forces that may influence
behavior. The SCES has been administered in many assessment studies of assisted living facilities and provides a means to compare facilities for independence and comfort. As a test of validity, the items that were selected for the final version of the SCES significantly discriminated between types of facilities (P<. 10) (Moos and Lemke, 1996). Two of these subscales were chosen in order to assess challenging as well as supportive assisted living environments in a study of elderly women. It was important to move forward with a study that was focused on the self-rated health of elderly women, as that had not been addressed specifically within the literature.

Elderly women specifically experience environmental press that may be unique to their aging. One unique issue is that elderly women are more likely to be widowed than are older men (49% vs. 13%) (Teaford and Zavatka, 1998). This becomes more likely with age and this could be one cause for elderly women to be looking for assistance with their daily tasks. Could seeking daily assistance within an assisted living facility contribute to deteriorating health?

A study was undertaken that was concerned with elderly women and their incidence of breast cancer in a retirement facility. A cross sectional chart review of 139 women over the age of 50 who lived in a Connecticut nursing home was checked for breast cancer screening (Caranasos, 1997). Of those charts reviewed, only one resident had had a mammogram but 129 residents had had a portable chest x-ray. The authors concluded that the easier accessibility of portable x-ray machines enabled older women to obtain chest x-rays than a mammogram. Although this study is limited in its ability to be generalized, it does point to a potential problem of access for some types of cancer screening procedures due to living in a retirement facility environment.
Interestingly, in a Wisconsin study of older participants waiting to gain access to an assisted living facility, 61.9% of respondents cited a decline in health as their reason for moving into that environment (Merrill and Horn, 1990). This limited study, although qualitative, points to the disparity for these participants between a need to gain access to an assisted living facility for assistance with daily living activities but possibly risking health-screening options at the time when health is declining.

An added twist is the frequency of declining health among the older residents who are within this environment. In a recent study of 193,467 residents 80 years and older, a chart review was conducted and it demonstrated an accelerated rate of declining health (Fires, Morris, Sharupsiki, et. al., 2000). Of those surveyed, diseases, falls, and other associated maladies were shown to be accelerated among the elderly residents of those facilities. This study had a strong methodology and enough statistical power to make it one that can be generalized to older residents.

Given an accelerated rate of declining health among the older residents of a retirement facility, what options are available for elderly women to obtain screening measures? In a study of the influence of the age of a patient on the interaction with their physician, 45 patients over 65 years of age were assigned to primary care residents. Other groups were formed with younger patients and the interactions of these groups were compared. What was noted was that although the older patients discussions were more lengthy with their physician visit, they were given less advise to change health habits, were given less health education, and given less counseling (Callahan, E., Bertakis, K., Azari, R., et. al., 2000). The results were profiled against the older patients self-rated health status recorded from the SF-36 and what was noted was that those who had
lower self-rated health and had great need were not receiving what they needed. The environmental press of declining health and admittance to retirement facilities may not be the answer to getting more assistance, especially if physicians recommended less preventative health behaviors.

This trend can be reversed and was demonstrated with a project that was undertaken by a group of social workers to target elderly women in inner city retirement centers. They received funding to provide BSE workshops in several targeted centers. The results were that 300 older women participated in 12 different senior centers. Of those women, 42 of those women required medical follow up (Zimmer and Zax, 1996). Although this effort targeted African American and Latino older women, it makes the case for providing assistance to lower the risk of breast cancer for elderly women by taking the health education to the environment in which they are located.

These studies demonstrated some limited evidence of health risks for those elderly residents depending on the environment in which they chose to reside. Elderly women who chose assisted living facilities have not been convincingly studied as to the health risks inherent in the environment. This variable is one that was included in conjunction with BSE’s to determine their influence on their self-rated health status.

**Self-rated health status**

The outcome for a preventative health strategy is to positively influence a person’s health. One way of measuring a person’s health is to ask them to record their perception of their health. The concept of health has been traditionally assessed by objective means but subjective ways of measuring health have gained prominence over time. A measure of subjective health is typically assessed by evaluating an individual’s perception of their
health (Gannon, 1999). This concept has been referred to as self-reported health status, subjective health status and perceived health status but for the purposes of this research the term self-rated health status will be regarded as synonymous with these terms. In elderly women, self-rated health status has been reported to be a better predictor of mortality and depression than objective health (Gannon, 1999). With this important measure of elderly women’s health, it is important to look at the recent research that has been conducted in this area.

In a descriptive study that was conducted with elderly women, the variables of self-rated health and illness appraisal were related to the quality of their life. The sample was a group of 137 elderly women with the average age being 76 (Nesbitt and Heidrich, 2000). This correlational study found that subjects rated their health and level of illness in a positive manner and this also was related to their feelings toward their quality of life. One of the limitations with this study as stated was that older participants tend to be health optimists and therefore could bias their data on reporting their level of health and illness. This study uses the data gathered to make some strong statistical arguments for the relationship between self-rated health scores and the participants overall outlook of life. This relationship is very much related to an older study that was conducted with a larger number of women in a variety of age groups. This randomly chosen sample of 753 women were placed in age categories and given an 18-item questionnaire that attempted to measure variables of self-rated health and life satisfaction. The results indicated that across all age groups of women, the higher the degree of illness the lower the life satisfaction score (Riddick, 1982). This was especially true for the elderly women that were looked at in comparison to the other groups. Although this study is well designed, it
really looked at working status versus retirement as factors that determined self-rated health and overall life satisfaction. This may have caused the elderly women’s responses to be more negative relevant to young women’s responses. This study makes a case for studying elderly women as a specific group and comparing their responses to others in a similar stage of life.

Another important point about self-rated health among the elderly is that, in many cases, the older participant makes their judgment relative to where they are at that place in time. An example might be that an older person might comment on their health status in comparison with that of their friends or with the health and length of life of family members. For instance, if an elderly woman’s parents died in their 50’s, then she is likely to believe that having lived to be 65 is a special accomplishment (Schrock, 1975). This may explain some of the other influences that account for an older person’s self-rated health status. In a large and often quoted research study of older participants in the Netherlands, an attempt was made to find a direct relationship between several health measures (physiological and psychological) to explain the level of self-rated health recorded by the participants (Gertrudis, Kempen, Miedema, et. al., 1998). The study involved asking 8723 older participants, who were not institutionalized, about a single rating of their overall health. The sampling method was strictly followed and insured a representative sample of all the age categories and sex. The results indicated that multiple measures of health were more accurate in assessing an older person than when using a single item measure of perceived overall health (Gertrudis, Kempen, Miedema, et. al., 1998). This study is significant due to its large scale and statistical power. The conclusions of the study point to the fact that self-rated health status is a multifactor
process and are more accurately understood when multiple measures of health are part of the assessment. One limitation is that the participants of this study residing in the Netherlands could be argued as to their comparability to elderly women in the United States.

A US longitudinal study has been conducted to seek factors that influence length of life and self-rated health status among elderly participants. Data from the Ohio Longitudinal Study of Aging and Adaptation found that positive psychological factors contributed significantly in influencing self-rated health status among those elderly participants studied and actually appeared to be linked to additional years of life (Leavy, Slade, Kunkel, et. al., 2002). This study has followed the participants for a period of seven years and brings out many factors that correlated to a positive self-rated health status, one of which was positive health behaviors. This set of studies considering an elderly women’s self-rated health is still not fully developed for women over the age of 75. Using a group of elderly women and providing BSE as a health behavior to reduce the incidence of advanced breast cancer provided a research project not fully addressed by previous research studies.

One instrument that has been used extensively to record self-rated health is the SF-36 Health Survey. It is a highly recommended instrument to record perceptions of this type and it was reviewed as a template to record elderly women’s health. Reviewing the SF-36, it contains questions (items), which measure concepts (or constructs) and health transition. SF-36 scales are scored using Likert’s method of summated ratings.

The SF-36 uses scales of physical functioning, role-physical, bodily pain, and general health to measure physical health (Ware and Gandek, 1998a). It also uses
vitality, social functioning, role-emotional, and mental health, in order to assess the total psychological health of the individual (Ware and Gandek, 1998a). Another reason for reviewing this instrument was its high reliability and validity. The published Cronbach’s alpha for the instrument was .80 (Ware and Gandek, 1998b). The SF-36 has also been previously used to record health information from older women in Sweden, (Persson, Karlson, Bengrsson, et. al., 1998) so it seemed like an instrument that could form the basis for this research. Contemplating the use of the SF-36 in conjunction with questions to cover additional variables, made it important to look at the SF-12 which is a shorten form of this instrument.

The SF-12 reproduces the eight-scale profile with fewer levels than the SF-36 scales and yields less precise scores, as would be expected for single-item and two-item scales. However according to Ware, for large group studies, these differences are not as important, because confidence intervals for group averages in health scores are largely determined by sample size (Ware, Kosinski, and Keller, 1996). The most useful research efforts have employed Ware’s combination of scales as a generic core. With this core of measures it makes it possible to compare results across studies and populations and accelerates the accumulation of interpretation guidelines essential to determining the clinical, economic, and social relevance of differences in health status and outcomes (Ware, 1999).

Self-rated health status is composed of a variety of factors that need to be considered as part of any attempt at accurately recording an elderly woman’s health. Advanced breast cancer represents a threat to an elderly woman’s health so studying the factors that might affect her self-rated health will advance this field of study.
Breast self-examination in relation to self-rated health status

The technique of breast self-examination (BSE) is important because it is believed to help in reducing the risk of mortality from breast cancer in elderly women. Since the statistics are unfavorable when studying the trend for breast cancer, this technique for elderly women is one of several ways to defend themselves against advanced disease. Breast cancer is responsible for a large and rising proportion of deaths among elderly women (Caselli, 1996); (Costanza, 1992); (Costanza, et. al., 1992). The American Cancer Society and other breast cancer awareness groups have advocated for BSE as a suggested mechanism that women could use to detect early changes in breast tissue. Given the low participation, BSE has been the focus of several studies by a variety of researchers and some of the most important studies are reviewed as a background for this research effort.

In an early study, 101 elderly women from two different retirement facilities were given a questionnaire to record information about BSE. The focus was to ascertain what teaching methods promoted the practice of BSE. What was discovered was that television instruction was the best method for getting older women to perform BSE correctly. The respondents indicated a high percentage (61%) were actively using BSE monthly (Lashley, 1987). An additional method that related to participation was receiving instruction in a classroom setting. This has indications for providing a successful intervention and these results could be replicated since the study was so well described.

A landmark research study was conducted in 1988 by Grady on the level of participation of women in using BSE. In her study, she used 528 women and subdivided
them into age groups (Grady, 1988). She next provided BSE instruction and reminder cards so that she could follow them over a period of two years to see their ability to adopt this health behavior. What she found was that the elderly women in the study were the best in adopting BSE and practicing the technique correctly. The statistical analysis demonstrated that confidence in the technique was the best predictor of long-term use of BSE among the elderly women. It was out of this research that she published a review of literature on the previously conducted studies on BSE. The author proposed a research agenda that addressed the following topics for additional studies: 1. Testing BSE instructions that were tailored for older women, 2. Studying the intervening steps between BSE and the cancer diagnosis, 3. Testing methods for gaining greater acceptance of BSE among elderly women, and 4. Investigating the relationship of BSE and the earlier diagnosis of breast cancer (Grady, 1992). This spurred a number of good studies and they are reviewed for their contributions to the proposed research agenda.

One of the research efforts aimed at testing BSE instructions for elderly women was implemented at a specific retirement facility. The results from a test group of elderly women indicated that they were fairly accurate in remembering the technique of BSE as it was presented. This effort to instruct elderly women in a retirement facility to correctly perform BSE was provided to 62 subjects with an educational interventional program (Wood, 1996). The results were that the subjects demonstrated increased knowledge and acceptance of the technique as a result of the program. This study was small and not extremely rigorous so the need still exists for a more structured study to be conducted to obtain these kinds of results and apply them to a larger population of elderly women. The
interesting element to this study was the use of a video for each of the participants so that they could review the technique.

At the same time many were trying to raise levels of participation, a landmark case was being published that contributed to understanding why elderly women might be reticent to practice BSE. Champion conducted a correlational study to identify attitudinal variables that might be predictive of intent (Champion, 1988). Her work was done by in home interviewing and included women of a variety of ages. After collecting her data, she used discriminative analysis to find a relationship between frequency and proficiency of BSE related to the participants’ sense of susceptibility and personal motivation. Her resulting questionnaire was used by many later studies to collect more specific information on older women. Champion later wrote that specific research efforts needed to be developed to address barriers such as embarrassment and fear among elderly women (Champion, 1992). One specific theory that she advocated as a guide to continued research was the Health Belief Model. A research effort that used the Health Belief Model was one that employed a quasi-experimental research design. In this early application of the Health Belief Model, the researcher planned the intervention around a workbook that was designed to give the elderly women the issues of susceptibility to breast cancer and advocated BSE as a remedy. The control group was only interviewed with the posttest instrument. What was noted in this early study was that the 68 elderly women in the treatment group were more likely to adopt BSE and perform it accurately after three months than the control group (Baker, 1989). This research was well designed with the participants being chosen randomly providing some ability to generalize to the
larger population. This study pointed towards further research into motivation to adopt BSE.

In a more recent study, a phone survey was conducted on 119 women from age 51 to 80 years of age (Lauver, D., Kane, J., Bodden, J. et. al., 1999). The targeted group consisted of low-income rural women in Wisconsin and the nurses used several attitudinal scales to help to get quantitative scores. The research design was well conceived and the statistical analysis demonstrated that breast biopsy, family history, beliefs about screening and cancer, and prior instruction on BSE were the best predictors of adopting the technique. Again other factors that were specific and personal to the elderly woman appear to have motivated participation in adopting BSE.

Besides these personal barriers that could interfere with adopting BSE as a healthy behavior, other less obvious barriers have been suggested such as bias of the referring physician and the health care system that the older woman might be depending on for health advice.

The third category of research recommended by Grady was to discover ways to raise the levels of participation. A study was designed using a community outreach model, in order that BSE could be taught to a community of elderly women in Vermont (Worden, Solomon, Flynn, et. al., 1990). This study occurred after a one-year program of providing BSE instruction to the community and then the survey data was collected from participants selected through random digit dialing. What was discovered was that those women who took advantage of a televised broadcast on BSE were more successful in adopting BSE after one year and continued their health behavior into the second year. This rate of participation was not demonstrated among those who did not participate in
the BSE instruction. Another more recent descriptive study attempted to look at annual cancer screenings given to older women. Out of a group of 28 participants, only 25% knew about BSE and only 25% practiced the technique (Smith, M., 1995). This rate of participation is not encouraging and perhaps reflects the less focused attempt to give information about a variety of breast cancer screening options.

Another important study was done with a group of 614 women of a variety of ages that were assigned to groups with different kinds of instruction (Alcoe, Gilbey, McDermont, et. al., 1995). In this well-designed study, that handled many internal and external threats, groups were experimentally given different kinds of instruction. One group only received content, the second was given content plus practiced on a hand held breast model, and the third was given content, a hand held model, and time to practice on their own breasts. These groups were followed for 6 years and the group that had practice on their own breasts proved to be the best at accuracy and longevity at conducting BSE monthly. This study is one that can be generalized to a larger population but since it did not have a highly representative elderly woman cohort, it leaves this group in need of further research.

The last research category suggested by Grady concerned efforts to contribute to the area of research in investigating relationships between BSE and early diagnosis of breast cancer. As earlier mentioned, the 1992 qualitative study by Domarad looked at 124 elderly women and recorded their ability and knowledge to perform BSE (Domarad, 1992). In her study, 82% of respondents had preformed BSE themselves. Fifty percent of the respondents said that they had been instructed in the method of BSE. In the same group of elderly women, only 10% of respondents said that they would obtain a
mammogram if their physician recommended it. Also in this study of 124 elderly women, 16 rated their health excellent (12.9%), 33 respondents rated their health very good (26.6%), and 45 answered that their health was good (36.3%). The remaining 30 (24.2%) rated their health as fair or poor. This study helped to isolate some of the variables that could lead to a quantitative study to determine what their association might be with self-rated health.

It appears that each of the variables had been studied but not in a way that brings them all together to attempt to better understand their interplay. The original question about the practice of BSE and other variables on the ability of elderly women to self-rate their health status had not been researched. These studies gave an adequate background to stage this study and make a contribution to the better understanding of this health behavior, which if adopted, could positively influence the health of elderly women.

THEORETICAL FRAMEWORK

The health belief model has been extensively used to frame previous studies on the utilization of BSE. The health belief model is based on the tenets that participants in a health promotion effort can be influenced by the knowledge of the severity of the disease, perceived susceptibility, and the perceived barriers and benefits to the intervention (Lauver, 1987); (Strecher and Rosenstock, 1997). Part of this research was to use the Gail model of risk assessment to ascertain the risk of severity and susceptibility for each research participant. Besides the element of risk to women, Lauver’s theoretical review (1987) suggests looking at competence as a mediator between information and BSE could advance future research.
Individual competence is a variable that was included in this research as it was described by Lawton in his press-competency model (Lawton, 1980). His definition of competence was a characteristic of the individual that was independent of factors outside the individual (Lawton, 1980). Lawton’s theory was that older people’s adaptive behavior was an outgrowth of the interaction between their competence and the press or external forces of their environment. As part of this research effort, this meant exploring whether an older woman provided information about BSE was influenced by competence and or environmental stimulus. According to Lawton, the tendency is that every individual experiencing a given environmental press will establish an adaptive level of behavior as a response (Lawton, 1980).

In the research conducted, the environment and individual competence were theorized to influence a behavior that might promote the diagnosis of advanced breast cancer. The object of this research was to find the significance of these factors and if these theories aptly describe this situation. This research looked at whether this compilation of theories captures the adaptive behavior of the older woman who practices BSE and ultimately influences a positive rating of overall health.

Wilson and Cleary proposed a concept that described relationships that lead in a linear way to a health related quality of life. Using their health related quality of life (HRQL) model, this research moves these measures of health under the headings that were already proposed by Lawton. Using similar factors it is possible to describe a situation where an elderly woman would have an increased risk for breast cancer. From their research, Wilson and Cleary call for the development of treatment strategies to remedy HRQL problems. The development of treatment strategies requires not only that
key factors are related but also how they are integrated to determine adaptive behavior and the quality of life (Wilson and Cleary, 1995). This is the framework from which this research proceeds.

Concluding this research review yielded the need to look not only at these influences on elderly women and their self-rated health status but also what is their relationship to each other. Can educational information about BSE be influential for women over the age of 75 years? How does individual competence and or environmental press impact an elderly woman’s ability to self-rate her health? Which of these has the most influence on self-rated health? These questions have not been specifically addressed in combination by the literature and therefore set the stage for continued study.
CHAPTER 3

METHODODOLOGY

DESCRIPTION OF THE METHODOLOGY

This study was a quasi-experimental research study of a group of elderly women and attempted to find the association that selected variables might have with their self-rated health status. The study was based on a selected group of elderly female participants, who experience a manipulated educational treatment (BSE) to predict its effect on self-rated health status. Additionally, the rival influences of risk, individual competence, and environmental press were studied to determine their effect on self-rated health status.

DESIGN OF THE STUDY

Recruiting elderly women participants, a comparative control group research design was employed in order to obtain their self-rated health status after introducing the BSE intervention. The specific research design is diagramed in Figure 3 (Campbell and Stanley, 1963). The active independent variable was the knowledge of BSE and the added rival independent variables are breast cancer risk, individual competence, and environmental press. The dependent variable was an elderly woman’s self-rated health status.
Quasi-experimental Research Design
The Comparison Control Group Design

Figure 3.1. Quasi-experimental Research Design: The Comparison Control Group Design.
POPULATION AND SAMPLE

One method to better understand the diversity of the population of elderly women was to subdivide them into descriptive groups. As mention previously, the young-old and the old-old or elderly have been previously categorized but not solely on age but also on health and social characteristics (Neugarten, 1982). For this research, elderly or old-old women were the population that was targeted. A purposive group of assisted living facilities were assigned so that two groups could be formed based on similar socioeconomic standards and racial composition. Once these two purposive groups of facilities were formed, they were randomly assigned at the facility level to either a treatment or comparison group. This allowed for a stronger research design and more ability to make the groups comparable. The Activities Directors were contacted at the selected facilities and they were asked to recruit the participants for the instruction in BSE. The individual elderly women participants represented a convenience sample.

In order to use multiple linear regression to answer the last research question, alpha level, power, sample size, and effect size needed to be handled simultaneously and a priori. It is suggested that a power level should not be lower than .80 in order to maintain a moderate effect size at both .05 and .01 alpha levels (Hair, Anderson, Tatham, 1998). Setting an alpha level a priori of .05, a power level of .94 and a moderate effect size .5, results in a corresponding sample size of 100 (Hair, Anderson, Tatham, 1998). These 100 participants would have resulted in an even distribution between the control and treatment facilities.
INSTRUMENTATION

To proceed with a quantitative study, a questionnaire was needed to measure these specific variables. In order to measure such variety in attitudes, it was important to look for an instrument that allowed elderly women the latitude to record their health status. Realizing that self-rated health status can stem from a variety of influences affecting an individual, a multifaceted instrument was needed. So permission was obtained to use the SF-12 and questions were added pertaining to knowledge of BSE, environmental press, and individual competence to create an amended instrument. Written permission was obtained via e-mail correspondence and that e-mail is included as Appendix A. The amended instrument is included as Appendix B.

Using the SF-12 as the core instrument, additional items were added to create the amended questionnaire. It has been highly stressed that the SF-12 and any revisions of the instrument need to be tested with elderly adults prior to it being embraced by clinicians and researchers (Andresen, Rothenberg, and Zimmer, 1998). These additions to the SF-12 were done to construct an instrument for this study so a field-test of the amended survey was needed.

Establishing validity of the instrument was accomplished by considering face and content validity. The primary researcher analyzed face validity. Next, a panel of experts verified the instrument’s content validity by looking at the representativeness of the items. The experts were a gerontology professor, an educational research professor, two women’s health physicians, a women’s health professor, and two women’s health practitioners. The amended instrument was given to a purposive sample of twelve older women to determine readability and to insure that the instrument measured the content it
was purported to measure. Additional editing resulted from this process and enabled the instrument to proceed to field-testing for content validity.

Field-testing the amended instrument also created an opportunity for rehearsal of the health promotional instruction to be given in an assisted living facility for elderly women in Franklin County, Ohio. A class was planned in the community room of an assisted living facility. A registered nurse in women’s health conducted the class. A purposive group of five elderly women responded to a flyer for the class in the selected retirement center.

Designing BSE instruction for elderly women has been successfully conducted previously (Baker, 1989); (Wood, 1996), so those efforts were consulted to attempt to replicate their success. This health promotional instruction followed that example by using a video on the technique of BSE. The nurse instructor and assistant used an evaluation tool to gauge each participant’s perceived risk and susceptibility of breast cancer. It was important to establish the participants’ risk for breast cancer with a reliable score. The Gail Model of Assessment has been developed to determine the risk of breast cancer that is attributed to age, number of first-degree relatives with breast cancer, number of previous biopsies, presence of atypical hyperplasia, age of first live birth, and age at menarche (Gail, Brinton, Byar, et al., 1989).

The intervention continued with calculating each elderly woman’s risk of breast cancer and then reviewing the technique of BSE with the nurse. Each participant was given the opportunity to practice the technique on a hand held model breast in order to practice the information that they had just received.
Immediately after conducting the health promotional instruction, the participants were given the amended instrument as a post assessment to allow for recording responses, checking validity, and reliability.

Reliability can be improved in a number of ways and some of them are by lengthening the instrument, making all items of median difficulty, lengthening the time allowed to respond to the instrument, and by checking items for clarity (Salant and Dillman, 1994). *The Health of Older Women* survey is composed of items extracted from instruments whose original reliability is important to mention so that they are properly referenced. The SF-12 instrument has a published reliability that was obtained by the calculation of a coefficient of equivalence. Reliability coefficients of .70 or greater are generally satisfactory for scales used in group-level analysis (Ware, Kosinski, and Keller, 2002). Checking the SF-12 instrument for its original reliability shows that it has a reliability of .89 for the physical health scores and .76 reliability for the mental health scores (Ware, Kosinski, and Keller, 2002). The reliability of the SCES subscales of comfort and independence are reported through split-sample reliability scores of .90 and .80 respectively (Moos and Lemke, 1996). The reliability of the IADL subscales has been computed based on elderly women living in an assisted living facility and for that group the reliability was .93 (Lawton and Brody, 1969).

The number of combined questionnaire items now totals thirty-two. Survey sampling error can be reduced by increasing the number of items in a survey instrument (Hopkins, Hopkins, and Glass, 1996). Adding highly reliable items to the SF-12 core instrument was done to try to help avoid survey sampling error. The field-testing of the
health promotion activity and the new questionnaire helped to evaluate all the components of the intervention and the instrumentation.

FIELD TEST DESCRIPTIVE RESULTS

Besides checking the utility of the new instrument, it seemed worthwhile to record some of the interesting pilot results from this small sample as anecdotal information. The average age of the class participant was 76.2 years, which was considered reflective of the old-old characterization. The Gail model of breast cancer was calculated for the group of five and the average for the group was 2.63 percent chance of developing breast cancer in five years. The Gail et. al. report qualifies the calculation by stating that women with a five-year risk that is greater than or equal to 1.7 percent are considered to be at high risk for breast cancer. Those women below 1.7 percent are considered at low risk for breast cancer. These calculations are based on the researchers’ use of white women only for the data needed to construct this algorithm.

Some of the more interesting results that were anecdotal in nature were the group’s reporting of their general good health. What is of some note was that two of the five participants indicated that they experienced some depression. As a group the elder women also indicated that they generally were able to accomplish most of what they desire to do in the day. Also all the participants were fairly accurate in their ability to remember the information that was discussed about how to conduct BSE. It was interesting to note that four of the participants reported checking their breast in all the steps of the BSE procedure.
DATA COLLECTION TECHNIQUES

The study was conducted at six facilities randomly assigned to be experimental sites and five facilities randomly assigned to be control sites. Each site was required to send a letter of agreement in order to be a part of the study and also provide some demographic information about their residents. See Appendix C for a sample of the letter of participation. All forms and correspondence with the facilities and the participants was submitted and approved by The Ohio State University Human Subjects Institutional Review Board. See Appendix D.

Participants were recruited from the selected assisted living facilities as either control or experimental subjects based on the assignment of their facility. Data collection began on July 5, 2003 and ended in December 2003. Potential participants were first notified by the activities directors about the study and the possibility of a workshop presentation of their facility. After the activities director selected a date, the workshop was provided by the registered nurse and accompanied by the researcher. Both control and experimental participants were handled similarly with an invitation to join the study. The purpose of the study as well as the requirements of the participants was explained. All the assisted living facilities used a similar recruitment flyer. See Appendix E for a copy of a recruitment flyer that was used to solicit participation in the assisted living facilities. If a participant agreed to participate in the study, she was asked to sign a copy of the consent form. A copy of the Health Information Privacy Protection Act (HIPPA) release that was designed for this study was also distributed to each participant. Upon agreeing to participate in the study, each woman was asked to sign a copy of the HIPPA release form. The researcher answered all questions regarding
participation and the privacy of the participant’s medical information for the study. The researcher and the registered nurse formally witnessed the signing of the consent and HIPPA forms. Copies of the consent form and the HIPPA release were given to each participant. Subjects were reminded that their participation was completely voluntary and in no way would compromise their health or living conditions.

After informed consent and the HIPPA release were obtained, all participants were given a copy of the Gail Model Risk Assessment tool to complete. The nurse helped the participants to complete the risk assessment tool and provided them with their 5-year and lifetime risk for breast cancer. Participants were assured that their risk assessment and subsequent *The Health of Older Women* survey would be kept confidential and that their names would not appear in any report of the results of this research study. Depending on whether the participant was a control or experimental participant, the study would continue with a video and workshop presentation on BSE for the experimental and only the survey for the control. The content for the instruction followed the guidelines that are provided on the proper technique for BSE (Schiller, Henderson, and Remedios, 1999). A video and handheld practice models were also provided in order for the information to be rehearsed and retained. The instruction was replicated to provide as successful an intervention as was provided for elderly women in previous research studies (Baker, 1989, Sites, 1995, and Wood, 1996). The experimental subjects received *The Health of Older Women* survey in eight weeks post workshop. The data from *The Health of Older Women* survey was collected after a period of 8 weeks to allow for each of the participants to have time to incorporate the BSE health behavior into their life style. This questionnaire was mailed to each elderly woman with instructions to return the
completed instrument to investigators. Reminder cards were used to help assure that each participant completed the questionnaire. A second mailing of the questionnaire was done to insure that non-response error was addressed. All participants were informed that their involvement in the study would only be a one-time event and that no follow up would be required. Ninety-two participants completed The Health of Older Women surveys and were collected by the researcher. The results of this posttest evaluation was collected and analyzed for its significance. Participants who agreed to participate in this study were not deceived or misled. They were not placed at legal or physical risk by participating. They survey instrument primarily asked questions about participant’s health and living conditions. No specific incentives were provided for participation and subjects were assured that their responses were confidential. The data from each instrument was entered into a computer for tabulation with SPSS 11.5 software.

The Health of Older Women contains questions that help to gather data on the active and three of the rival independent variables from the research questions posed for this study. Please refer to Table 3.1. Knowledge about BSE as a preventative health measure is ascertained in questions 14, 15, 16, 17, 18, and 19. The variable of risk assessment was measured through the use of the Gail model calculation that was done as a pretest prior to the BSE intervention. Each elderly woman received her calculated score and her risk for breast cancer. Self-rated health was addressed through the calculation of a physical score and a mental health score as part of the SF-12 portion of the questionnaire. The first question on the SF 12 asked the participant to rate their health on a scale of 1 (excellent) to 5 (poor). The second and third questions asked about the participants’ health and its effect on activities with a scale of 1 (yes, limited a lot) to 3
(no, not limited at all). The fourth and fifth responses gauge the ability to perform daily activities as a result of physical health with a positive response ("yes") which receives a rating of 1; a negative response ("no") which receives a rating of zero. The sixth and seventh responses gauged the participants ability to perform daily activities as a result of their mental outlook with a positive response ("yes") which receives a rating of 1; a negative response ("no") which receives a rating of zero. The eighth response asked about the effect of pain on their ability to do normal work and was recorded on a scale 1 (not at all) to 5 (extremely). The ninth response asked respondents to rate how much of the time they feel calm and peaceful and that was recorded on a scale of 1 (all of the time) to 6 (none of the time). The remaining questions ten, eleven, and twelve ask about level of energy, depression, and health interference with social activities and each was rated using 1 (all of the time) to 5 (none of the time). Individual competence was assessed with the questions 20, 21, 22, and 23, which are imported from the IADL scale. Environmental press data was collected in questions 24, 25, 26, 27, 28, 29, 30, and 31 that are the subscale questions from the SCES that was used to measure independence and comfort provided by the assisted living facility.

<table>
<thead>
<tr>
<th>Type of Variable</th>
<th>Construct</th>
<th>Measured by Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Independent</td>
<td>Knowledge of BSE</td>
<td>14, 15, 16, 17, 18, and 19</td>
</tr>
<tr>
<td>Rival Independent</td>
<td>Risk of Breast cancer</td>
<td>Gail model calculation</td>
</tr>
<tr>
<td>Rival Independent</td>
<td>Individual competence</td>
<td>20, 21, 22, and 23</td>
</tr>
<tr>
<td>Rival Independent</td>
<td>Environmental press</td>
<td>24, 25, 26, 27, 28, 29, 30, and 31</td>
</tr>
<tr>
<td>Dependent</td>
<td>Self-rated health status</td>
<td>2-13 for a physical health and mental health score</td>
</tr>
</tbody>
</table>

Table 3.1. Data Collection with the Health of Older Women Survey
DATA ANALYSIS

The following statistical analysis plan was designed to determine the appropriateness of Press-Competency and Health Related Quality of Life theories by testing specific statistical hypotheses, in addition to answering the research questions posed in this study:

Statistical Hypothesis

1. A positive relationship exists between an elderly woman’s knowledge of BSE and her self-rated health status.


3. A relationship exists between individual competence and an elderly woman’s self-rated health status.


5. A significant proportion of the variance in an elderly woman’s self-rated health status will be explained by a stepwise combination of the tested independent variables.

Some of the participant responses were measured with an opinion scale. The self-reporting measures allowed the participant to answer a series of statements and indicate the extent of their agreement with the statement. Each choice was given a numerical value and a total score was derived that indicated the participant’s attitude or belief (Salant and Dillman, 1994). The SF-12 data provided responses that were ordinal but the scoring of the instrument as a whole resulted in a physical health and a mental health score that were interval level measures. The IADL responses represented ordinal
measures while the BSE scores represented interval levels of measure. The SCES data on environmental press responses were nominal responses and were coded so the resultant score would be an interval level of measure. Table 3.2 is included to describe all the statistical methods that were anticipated with this research.

Research Questions

- *Does knowledge about a preventative health behavior such as breast self-examination (BSE) contribute to the self-rated health status among elderly women?*

The first research question was concerned with finding out if elderly women correctly answered the questions about the mechanism of using BSE after 8 weeks. Knowledge about BSE was answered with descriptive statistics such as frequencies, percentages, means, and standard deviations. Next a one tailed t-test was conducted to compare the control and intervention group. A one tailed test is used as the intervention group was anticipated to have more knowledge. Finally a Pearson’s correlation was conducted to determine the relationship between the knowledge scores from the BSE participants and the self-rated health assessment, which consisted of a physical and mental health score.

- *For those elderly women in assisted living facilities, what are the risks for breast cancer?*

This research question was answered by providing the total frequency of risk for breast cancer by all the participants in the study. This was done with frequencies, percentages, means, and standard deviations.
<table>
<thead>
<tr>
<th>Descriptive data for groups</th>
<th>Two-group comparison</th>
<th>Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BSE knowledge</strong>&lt;br&gt;Frequencies, percentages, means, and standard deviations will be reported for both the treatment and control groups.</td>
<td>A one-tailed t-test is the statistic of choice for this comparison since the intervention group is anticipated to have more knowledge.</td>
<td>A Pearson’s product moment correlation will determine the relationship between BSE knowledge and the physical health score and the mental health scores of the participants.</td>
</tr>
<tr>
<td><strong>Risk assessment</strong>&lt;br&gt;Means and standard deviations will be reported for both the treatment and control groups.</td>
<td>A two-tailed t-test is the statistic of choice for this comparison.</td>
<td>A Pearson’s product moment correlation between 5 year risk and the physical health and mental health scores. Lifetime risk and the physical health and mental health scores for both groups.</td>
</tr>
<tr>
<td><strong>IADL’s</strong>&lt;br&gt;Frequencies, percentages, means, and standard deviations will be reported for both the treatment and control groups’ ability to perform independent activities of daily living as it defines competence.</td>
<td>A two-tailed t-test is the statistic of choice for this comparison.</td>
<td>A Pearson’s product moment correlation will determine the relationship of IADL’s with the physical health score and the mental health scores of the participants.</td>
</tr>
<tr>
<td><strong>SCES</strong>&lt;br&gt;Frequencies, percentages, means, and standard deviations will be reported for both the treatment and control groups’ level of comfort and independence as it defines environmental press.</td>
<td>A two-tailed t-test is the statistic of choice for this comparison.</td>
<td>A Pearson’s product moment correlation will determine the relationship of SCES with the physical health score and the mental health scores of participants.</td>
</tr>
<tr>
<td><strong>SF-12</strong>&lt;br&gt;Frequencies, percentages, means, and standard deviations will be reported for both the control and treatment groups’ mental health score and physical health score to define the self-rated health status.</td>
<td>A two-tailed t-test is the statistic of choice for this comparison.</td>
<td>A step-wise linear regression will be used to identify the combination of these four variables that best predicts self-reported health status (once for mental health and once for physical health).</td>
</tr>
</tbody>
</table>

Table 3.2. Summary of Statistical Methods for Research Questions.
• *Is the risk of breast cancer a determinant of their self-rated health status?*

This research question deals with the risk of breast cancer in elderly women who resided in assisted living facilities and that entailed using a two-tailed t-test in order to determine any differences between the control group and the intervention groups’ risk. The determination of a relationship between the risk of breast cancer and the physical, and mental health scores required a Pearson’s product-moment correlation coefficient. A Pearson product moment correlation coefficient was used to estimate both the direction and strength of a linear relationship (Hopkins, Hopkins, and Glass, 1996). A correlation was calculated for both the treatment and the control group’s risk compared to their self-rated health status.

• *To what degree does individual competence influence the level of self-rated health status for elderly women?*

This research question was the measure of influence individual competence has on self-rated health status. Again a two-tailed t-test was used to determine if any differences exist between the control and the intervention group. In order to determine if a relationship existed between competence and self-rated health, a Pearson’s product-moment correlation coefficient was calculated for both the treatment and the control group to determine strength and direction of a relationship.

• *To what degree does environmental press influence the level of self-rated health status for elderly women?*

This research question was about the influence of environmental press on self-rated health status. Again a two-tailed t-test was used to determine if any differences exist between the control and the intervention group. To determine a relationship between
competence and self-rated health status, a Pearson’s product-moment correlation coefficient was calculated for both the treatment and control groups.

- Which of the independent variables contributes most significantly to self-rated health status?

This final research question required the use of all the independent variable scores (BSE, risk assessment score, individual competence, and environmental press) and allowed for predicting the dependent variable from the best combination of variables to self-rated health status. A step-wise linear regression was used to identify the combination of these four variables that best predicts self-reported health status. This was done once for the mental health score and once for the physical health score.
CHAPTER 4

PRESENTATION AND ANALYSIS OF THE DATA

INTRODUCTION

This study was conducted to determine if knowledge of breast self-examination (BSE), as an adaptive health behavior, could influence elderly women’s self-rated health status in a positive way. The study used a quasi-experimental research design to find the relationship that additional variables might have on elderly women’s self-rated health status. The investigation was based on a sample from a population of elderly female participants, who experienced a manipulated educational treatment (BSE) to predict its relationship on self-rated health status. Additionally, the rival influences of risk, individual competence, and environmental press were studied to determine whether an association with self-rated health status exists.

This chapter presents the study findings. The results are presented in the following manner. A description of women is presented to describe those who participated in the study. Descriptive statistics will be provided for each of the variables in this study. This will be followed by a comparison of the control and experimental groups using the t-test to make comparisons between the two groups on each of the study variables. Next, a correlational matrix describing the Pearson product moment correlation coefficients
between the variables will be provided. Lastly, a step-wise linear regression model is presented which will be used to find those variables that explain the most variance in self-rated health status among the elderly women who participated in this study.

DESCRIPTION OF STUDY PARTICIPANTS

The number and average age of participants

The settings for this study were 11 assisted living facilities that are located in a midwestern state. Sites were stratified based on a facilities’ number of residents and racial population percentage and then randomly assigned as either a treatment group or a control group. From the total facilities, 6 facilities became the treatment group and provided 50 participants. The 50 experimental participants yielded 42 usable responses after 8 weeks, which corresponds to an 84% response rate. The five other facilities were selected as a control group and provided 50 participants. Refer to Table 4.1: Number of Subjects Participating by Treatment Selection, Facility Size, and Percentage of Ethnicity.

A total of 92 participant responses out of 100 were used in the study and the minimum age of the participants was 75 years of age and the maximum was 95 years of age. The mean age for participants was 82 years (SD 5.6). The average age of the participants in the experimental group were 84 years (SD 5.7) and the average age of the control group was 81 years (SD 5.2). The two groups appear to be comparable on participant ages.

Clinical breast examination and medical check-up

The participants also provided information about the last time that a physician or other health care provider examined their breasts for lumps otherwise known as a clinical breast examination (CBE). All the respondents in the study were asked this question
<table>
<thead>
<tr>
<th>Site #</th>
<th>Control or Experiment</th>
<th>Subjects N</th>
<th>Number of total residents</th>
<th>Percentage of Caucasians</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>E</td>
<td>6</td>
<td>175</td>
<td>98%</td>
</tr>
<tr>
<td>2</td>
<td>C</td>
<td>15</td>
<td>200</td>
<td>100%</td>
</tr>
<tr>
<td>3</td>
<td>E</td>
<td>4</td>
<td>60</td>
<td>98%</td>
</tr>
<tr>
<td>4</td>
<td>C</td>
<td>10</td>
<td>30</td>
<td>97%</td>
</tr>
<tr>
<td>5</td>
<td>E</td>
<td>6</td>
<td>200</td>
<td>100%</td>
</tr>
<tr>
<td>6</td>
<td>C</td>
<td>5</td>
<td>130</td>
<td>96%</td>
</tr>
<tr>
<td>7</td>
<td>E</td>
<td>8</td>
<td>35</td>
<td>100%</td>
</tr>
<tr>
<td>8</td>
<td>C</td>
<td>7</td>
<td>60</td>
<td>90%</td>
</tr>
<tr>
<td>9</td>
<td>E</td>
<td>8</td>
<td>181</td>
<td>100%</td>
</tr>
<tr>
<td>10</td>
<td>C</td>
<td>13</td>
<td>200</td>
<td>100%</td>
</tr>
<tr>
<td>11</td>
<td>E</td>
<td>10</td>
<td>79</td>
<td>95%</td>
</tr>
</tbody>
</table>

N=92

Table 4.1: Number of Subjects Participating by Treatment Selection, Facility Size, and Percentage of Ethnicity

and 4% indicated that they were never given a CBE. Additionally, 9.8% responded that it had been several years ago, 12% had a CBE 2 years ago, and 26% indicated that it had been last year and 30% responded that they had CBE six months ago. Investigating the responses on CBE between control group, the modal response for the control group was the “6 months ago”. The most frequent observation between CBE and the experimental group was “Last year”. Please refer to Table 4.2: Participant Responses Concerning Clinical Breast Examination Conducted by a Physician or Health Care Provider. The older women in the study exhibited a frequent exposure to CBE.
<table>
<thead>
<tr>
<th>Response choice</th>
<th>Control</th>
<th>Experimental</th>
<th>Total</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Never</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>4.3</td>
</tr>
<tr>
<td>2. Unsure</td>
<td>9</td>
<td>7</td>
<td>16</td>
<td>17.4</td>
</tr>
<tr>
<td>3. Several years ago</td>
<td>6</td>
<td>3</td>
<td>9</td>
<td>9.8</td>
</tr>
<tr>
<td>4. Two years ago</td>
<td>6</td>
<td>5</td>
<td>11</td>
<td>12.0</td>
</tr>
<tr>
<td>5. Last year</td>
<td>9</td>
<td>15</td>
<td>24</td>
<td>26.1</td>
</tr>
<tr>
<td>6. Six months ago</td>
<td>17</td>
<td>11</td>
<td>28</td>
<td>30.4</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>42</td>
<td>92</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 4.2: Participant Responses Concerning Clinical Breast Examination Conducted by a Physician or Health Care Provider.

**Frequency of visits to a physician or a medical check-up**

Table 4.3 is provided to demonstrate the response for participants concerning the last time that they had a medical check-up with a physician. Only 2 subjects responded that they had not had a medical check-up with a physician. The percentage of study participants who had not consulted a physician for a medical check-up in over 2 years was 4%. Additionally, 12% of respondents demonstrated that they had a medical check-up in the time frame of 2 years. Of the respondents, 19.6% experienced a medical check-up within 12 months and 62% were given a medical check-up within the last 6 months. Comparing the control and experimental groups in reference to their response concerning the frequency of a medical check-up with a physician, both groups’ modal response was “6 months or less”. The older women in this study demonstrate a high utilization of medical check-ups with their physician.
<table>
<thead>
<tr>
<th>Response choice</th>
<th>Control</th>
<th>Experimental</th>
<th>Total</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. None</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>2.2</td>
</tr>
<tr>
<td>2. More than 2 years</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>4.3</td>
</tr>
<tr>
<td>3. Two years</td>
<td>6</td>
<td>5</td>
<td>11</td>
<td>12.0</td>
</tr>
<tr>
<td>4. Last year</td>
<td>8</td>
<td>10</td>
<td>18</td>
<td>19.6</td>
</tr>
<tr>
<td>5. Six months or less</td>
<td>31</td>
<td>26</td>
<td>57</td>
<td>62.0</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>42</td>
<td>92</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 4.3: Participant Responses Concerning the Length of Time Since Their Last Medical Check-up with a Physician.

DESCRIPTIVE STATISTICS PROVIDED BY THE PARTICIPANTS

The descriptive information provided in the survey helped to address the hypotheses suggested by the literature concerning the frequency of clinical breast examination (CBE) offered to older women and the frequency that older women are able to receive a medical check-up from a physician. In the case of our participants, they indicated that they were offered CBE more often than the literature suggested and they saw their physician for a medical check-up routinely.

Refer to Appendix C to view Table C1: Frequency Values for Items Measuring Older Women’s Health; it provides instrument items modes, means, and frequency tables measuring the dependent and independent variables. The analysis was completed using the entire data set (N=92).

**BSE knowledge**

Scores for the variable BSE knowledge were compiled by using the correct answers to survey questions 14 through 19 on the survey instrument. The overall score was the number of correct responses. The mean score for BSE knowledge by the control
participants in the study was 2.5 questions correct out of 6 possible questions (SD 1.2). The mean score for BSE knowledge by the experimental participants in the study was 3.5 questions correct (SD 1.1). Refer to Table 4.4: Summary of the Variable Means and Standard Deviations.

Risk assessment

Again in Table 4.4: Summary of the Variable Means and Standard Deviations, the variable Risk Assessment was calculated with the answers provided by the participants for a 5-year risk for breast cancer and a lifetime risk of breast cancer. The mean score for 5-year risk by the control participants in the study was 2.4 (SD 1.7). This score equates to a 2.7% projected chance of breast cancer based Gail et. al.’s projections for white women at the initial age of 70. The mean score for lifetime risk for breast cancer by the control group was 4.7 (SD 4.5). This score falls into a 6.7% projected chance of breast cancer based on the same parameters as 5-year risk. The mean score for 5-year risk by the experimental group was 2.3 (SD 2.3). This equates to a 2.7% projected chance of breast cancer based on Gail et. al.’s projections for Caucasian women at the initial age of 70. Their lifetime risk for breast cancer was a mean of 4.0 (SD 2.9). This equates to a 6.7% projected chance of breast cancer based on the same parameters as 5-year risk.

Individual competence

Table 4.4 provides the mean score for individual competence (IADL) and this was calculated by assigning a score of 1 for the choice of “no assistance” and a zero for all other choices provided within the instrument. The control group of respondents had a mean individual competence (IADL) score of 3.2 (SD 1.3) out of possible score of 4 while the experimental group of respondents had a mean score of 2.2 (SD 1.5).
<table>
<thead>
<tr>
<th>Variable</th>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSE knowledge</td>
<td>Control</td>
<td>50</td>
<td>2.54</td>
<td>1.2</td>
</tr>
<tr>
<td></td>
<td>Experimental</td>
<td>42</td>
<td>3.50</td>
<td>1.1</td>
</tr>
<tr>
<td>Risk assessment 5 year</td>
<td>Control</td>
<td>50</td>
<td>2.4</td>
<td>1.7</td>
</tr>
<tr>
<td></td>
<td>Experimental</td>
<td>42</td>
<td>2.3</td>
<td>2.3</td>
</tr>
<tr>
<td>Risk assessment Lifetime</td>
<td>Control</td>
<td>50</td>
<td>4.7</td>
<td>4.5</td>
</tr>
<tr>
<td></td>
<td>Experimental</td>
<td>42</td>
<td>4.0</td>
<td>2.9</td>
</tr>
<tr>
<td>Individual competence (IADL)</td>
<td>Control</td>
<td>50</td>
<td>3.2</td>
<td>1.3</td>
</tr>
<tr>
<td></td>
<td>Experimental</td>
<td>42</td>
<td>2.2</td>
<td>1.5</td>
</tr>
<tr>
<td>Environmental Press (SCES) Comfort score</td>
<td>Control</td>
<td>50</td>
<td>3.2</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>Experimental</td>
<td>42</td>
<td>3.2</td>
<td>0.8</td>
</tr>
<tr>
<td>Environmental Press (SCES) Independence</td>
<td>Control</td>
<td>50</td>
<td>2.7</td>
<td>0.9</td>
</tr>
<tr>
<td></td>
<td>Experimental</td>
<td>42</td>
<td>2.8</td>
<td>1.0</td>
</tr>
<tr>
<td>Self Rated-Health (SF-12) Physical Health</td>
<td>Control</td>
<td>50</td>
<td>46.4</td>
<td>11.8</td>
</tr>
<tr>
<td></td>
<td>Experimental</td>
<td>42</td>
<td>38.8</td>
<td>10.6</td>
</tr>
<tr>
<td>Self Rated Health (SF-12) Mental Health</td>
<td>Control</td>
<td>50</td>
<td>51.8</td>
<td>9.7</td>
</tr>
<tr>
<td></td>
<td>Experimental</td>
<td>42</td>
<td>50.1</td>
<td>9.2</td>
</tr>
</tbody>
</table>

N=92

Table 4.4: Summary of the Variable Means and Standard Deviations.
Environmental press

The scores for environmental press (Sheltered Care Environmental Scale, SCES) are displayed and they were calculated by summing all the “yes” responses that were indicated by the respondents within the instrument. Two subscales are integrated into this instrument from the SCES were comfort and independence. They were used as measures of environmental press for the participants. The “yes” responses affirm either comfort or independence. The control group of respondents had a mean comfort score of 3.2 (SD 0.5) out of 4. Additionally, the control group also had a mean independence score of 2.7 (SD 0.9) out of 4. The experimental group of respondents had a mean comfort score of 3.2 (SD 0.8). The experimental group also had a mean independence score of 2.8 (SD 1.0).

Self-rated health status

Lastly, the respondents were scored on the self-rated health questions (SF-12) to compile a physical health score and a mental health score. For the elderly women in the control group, the physical health score mean was 46.4 (SD 11.8) and a mental health score of 51.8 (SD 9.7). The participants in the experimental group had a physical health score mean of 38.8 (SD 10.6) and a mental health score of 50.1 (SD 9.2).

EQUALITY OF PARTICIPANT GROUPS

Control and experimental group comparisons on BSE knowledge.

Table 4.5: Two Group Comparison of Variables Using the t-Test depicts the results of using a one-tailed t-test to compare the control group with the experimental group with the expectation that that the experimental group would have more knowledge of BSE. The t-test demonstrated a t statistic of 3.93 with 90 degrees of freedom and a p value of
<. 01. This indicates that a significant difference exists between the experimental group and the control group about the level of knowledge about breast self-examination.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Measure</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSE</td>
<td>BSE knowledge</td>
<td>3.93*</td>
<td>90</td>
<td>&lt;. 01*</td>
</tr>
<tr>
<td>Risk Assessment (Gail Model)</td>
<td>5 year risk</td>
<td>-0.30</td>
<td>90</td>
<td>.76</td>
</tr>
<tr>
<td></td>
<td>Lifetime risk</td>
<td>-0.96</td>
<td>90</td>
<td>.34</td>
</tr>
<tr>
<td>Individual Competence</td>
<td>IADL score</td>
<td>-3.56</td>
<td>90</td>
<td>&lt;. 01</td>
</tr>
<tr>
<td>Environmental press (SCES)</td>
<td>Comfort score</td>
<td>0.05</td>
<td>63.86+</td>
<td>.96</td>
</tr>
<tr>
<td></td>
<td>Independence score</td>
<td>-0.24</td>
<td>90</td>
<td>.81</td>
</tr>
<tr>
<td>Self rated health status (SF-12)</td>
<td>Physical health score</td>
<td>-3.25</td>
<td>90</td>
<td>&lt;. 01</td>
</tr>
<tr>
<td></td>
<td>Mental health score</td>
<td>-0.85</td>
<td>90</td>
<td>.40</td>
</tr>
</tbody>
</table>

N=92  
*One-tailed t-test  
+ Levene’s test for equality of variances was significant at .02 therefore equal variances could not be assumed.

Table 4.5: Two Group Comparisons of Variables Using the t-Test.

**Control and experimental group comparisons on risk assessment**

Next, a two-tailed t-test was conducted to compare the control group with the experimental group on the variable of risk assessment for breast cancer. The 5-year risk for breast cancer subscale yielded a t statistic of -.30 with 90 degrees of freedom and a p value of .76.
The lifetime risk for breast cancer subscale provided a t-test that demonstrated a t-statistic of -.96 with 90 degrees of freedom and a p value of .34. These comparisons indicated no statistically significant differences between the control group and the experimental group on the variables of 5 year and lifetime risk for breast cancer. This indicates that the groups are very comparable on the variable of breast cancer risk.

**Control and experimental group comparisons on individual competence**

The control group was compared with the experimental group on the variable of individual competence measured by using the individual competence (IADL) scores. A two-tailed t-test demonstrated a t-statistic of -3.56 with 90 degrees of freedom and a p value of < .01. The data indicates that the control group was significantly different than the experimental group when comparing the IADL scores as a measure of individual competence. This indicates that the control group was higher than the experimental group on individual competence.

**Control and experimental group comparisons on environmental press**

The variable of environmental press was measured through the use of the two subscales of the SCES known as comfort and independence. The t-test yielded a t-statistic of .05 with 63.86 degrees of freedom and a p value of .96. The t-test between the control and experimental group for independence and the t-test demonstrated a t-statistic of -.24 with 90 degrees of freedom and a p value of .81. These two measures of environmental press indicated no statistically significant differences between the control and experimental groups. This indicates that the two groups are very comparable on the variable of environmental press.
Control and experimental group comparisons on self-rated health status

Finally the dependent variable of self-rated health status was measured by using
the SF-12 scores of physical health and mental health. The two-tailed t-test for physical
health indicated a t-statistic of -3.25 with 90 degrees of freedom and a p value of < .01.
This subscale of self-rated health demonstrates a statistically significant difference
between the two groups on the measure of physical health. A two-tailed t-test between
the control and experimental groups for mental health indicated a t-statistic of -.85 with
90 degrees of freedom and a p value of .40. This subscale of self-rated health
demonstrated no significant difference between the two groups on the measure of mental
health. These comparisons demonstrate that the experimental group is lower than the
control group on physical health but the groups do not differ on mental health.

THE DEGREE OF INFLUENCE VARIABLES HAVE ON SELF-RATED HEALTH

Table 4.6: Correlation Between the Variables in the Control Group, displays the
Pearson product correlation coefficients between the various measures in the control
group. Lifetime risk for breast cancer and 5-year risk for breast cancer were highly
correlated with a r = .94 and a p value of < .01. Lifetime risk of breast cancer being
related to 5 year risk of breast cancer makes sense and reaffirms the work of Gail et. al.
The correlation coefficients between IADL score and physical health score indicate a
significant direct relationship between these two variables with r = .42. Additionally, the
correlation coefficient between BSE knowledge and physical health score indicated an
inverse relationship between these variables with r = .35. The measure of independence
score was inversely related to the physical health score of the control subjects with r =
- .29.
<table>
<thead>
<tr>
<th></th>
<th>Physical Health Score</th>
<th>Mental Health score</th>
<th>BSE knowledge score</th>
<th>Comfort score</th>
<th>Independence score</th>
<th>IADL score</th>
<th>5 year risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental Health score</td>
<td>.14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BSE knowledge score</td>
<td>-.35*</td>
<td>.12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comfort score</td>
<td>.12</td>
<td>.22</td>
<td>-.08</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independence score</td>
<td>-.29*</td>
<td>.00</td>
<td>.20</td>
<td>.25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IADL score</td>
<td>.42**</td>
<td>.25</td>
<td>-.10</td>
<td>.21</td>
<td>.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 year risk</td>
<td>.13</td>
<td>.11</td>
<td>.12</td>
<td>.15</td>
<td>.24</td>
<td>.12</td>
<td></td>
</tr>
<tr>
<td>Lifetime risk</td>
<td>.20</td>
<td>.14</td>
<td>.02</td>
<td>.22</td>
<td>.20</td>
<td>.17</td>
<td>.94**</td>
</tr>
</tbody>
</table>

N=50
* Indicates statistically significant correlations (p<.05)
** Indicates statistically significant correlations (p<.01)

Table 4.6. Correlations Between the Variables in the Control Group.

Table 4.7: Correlations Between the Variable Components for the Experimental Group, displays the Pearson product correlation coefficients between the various measures in the experimental group. In this set of correlations for the experimental group, lifetime risk for breast cancer and 5-year risk for breast cancer were positively correlated with r = .96. The 5-year risk of breast cancer was shown to correlate with independence with r = .36. Lifetime risk also correlated with independence among the experimental group with r = .39. The correlation coefficients between IADL score and physical health score was positively correlated with r = .47. Additionally, the correlation coefficients between BSE knowledge and mental health scores were positively correlated with r = .35. Likewise, independence with mental health score was also positively correlated with r = .37.
<table>
<thead>
<tr>
<th></th>
<th>Physical Health Score</th>
<th>Mental Health score</th>
<th>BSE knowledge score</th>
<th>Comfort score</th>
<th>Independence score</th>
<th>IADL score</th>
<th>5 year risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental Health score</td>
<td>.19</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>BSE knowledge score</td>
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<td>.35*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comfort score</td>
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<td>-.08</td>
<td>-.04</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Independence score</td>
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<td>.37*</td>
<td>.17</td>
<td>.10</td>
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<tr>
<td>IADL score</td>
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<td>.15</td>
<td>-.14</td>
<td>.03</td>
<td>-.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 year risk</td>
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<td>-.18</td>
<td>.06</td>
<td>.36*</td>
<td>-.10</td>
<td></td>
</tr>
<tr>
<td>Lifetime risk</td>
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<td>.03</td>
<td>-.13</td>
<td>.14</td>
<td>.39*</td>
<td>-.04</td>
<td>.96**</td>
</tr>
</tbody>
</table>

N=42
* Indicates statistically significant correlations (p<.05)
** Indicates statistically significant correlations (p<.01)

Table 4.7. Correlations Between the Variables in the Experimental Group.

The statistical hypotheses that were proposed are answered in the following manner:

1. A positive relationship was confirmed between an elderly woman’s knowledge of BSE and her self-rated health status. The experimental subjects indicated more knowledge than the control subjects. A positive correlation between BSE knowledge and mental health score was noted at the .05 level with the experimental subjects. An inverse relationship between BSE knowledge and the physical health score was indicated at the .05 level by the control subjects.

2. A relationship between risk for breast cancer and an elderly woman’s self-rated health status is disconfirmed. The correlation coefficient varied from -.30 to .03 for 5-year
risk of breast cancer and lifetime risk and exhibited no statistical significance among the experimental subjects. Likewise, the control subjects demonstrated correlation coefficients that varied from .11 to .20 with no evidence of statistical significance.

3. A relationship between individual competence and an elderly woman’s self-rated health status is confirmed. The correlation coefficient was .47 for IADL scores and physical health scores among the experimental subjects and was statistically significant at the .01 level. The correlation coefficient was .42 for IADL scores and physical health scores among the control subjects and was statistically significant at the .01 level. No significant relationship was demonstrated between IADL scores and the mental health scores for either group or the correlation coefficients ranged were .25 for the control group and .15 for the experimental group.

4. A relationship between environmental press and an elderly woman’s self-rated health status was disconfirmed. Among the control group of subjects the correlation coefficient between comfort score and physical health was .12 and between comfort and mental health was .22. Correlating independence and physical health demonstrated a -.29 coefficient at a statistical significance level of <. 05. This seemed to indicate that an inverse relationship was developed between these two variables. Independence and mental health received a correlation coefficient of .00 with no statistical significance. Within the experimental group of subjects the correlation coefficient between comfort score and physical health was .02 and between comfort and mental health was -.08. The experimental result between independence and physical health was -.00 and between independence and mental health was .37 and was not statistically significant. Refer to Table 4.6: Correlations
Between the Variables in the Control Group and 4.7: Correlations Between the Variable Components for the Experimental Group.

MODELS THAT EXPLAIN VARIANCE IN SELF-RATED HEALTH STATUS

The stepwise regression analyses with linear combination of the six independent variables are regressed on the dependent variable self-rated health status (two dependent scores) for both the control and experimental groups. Although three of the four models are statistically significant (p < .01), the variance explained never reaches 50% among any of the models and therefore does not adequately allow for prediction of the dependent variable from any of the independent variables regardless of group. See Tables 4.8: Model Variance to Predict Self-Rated Physical Health in the Control Group, 4.9: Model Variance to Predict Self-Rated Physical Health in the Experimental Group, and 4.10: Summary of Regression Analysis to Predict Self-Rated Mental Health in the Experimental Group.

Utilizing the IADL scores (17.2%) and the BSE scores (26.9%) from the control group, provided a model that explained the largest amount of variance in the physical health score. Together these variables regressed on the control group’s physical health score, explained 44% of the total variance. This was a significant model for explaining a portion of the self-rated health status among the control subjects. This is displayed in Table 4.8: Model Variance to Predict Self-Rated Physical Health in the Control Group.
<table>
<thead>
<tr>
<th>Step</th>
<th>Variable entered</th>
<th>R squared change</th>
<th>p value of R squared change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>IADL score</td>
<td>.17</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>2</td>
<td>BSE score</td>
<td>.27</td>
<td>.02</td>
</tr>
</tbody>
</table>

Predict Physical Health = 3.620 x IADL + 2.961 x BSE score + 42.220
Total variance explained 44%  
F=8.645

Table 4.8: Model Variance to Predict Self-Rated Physical Health in the Control Group.

The second model of variance that used control group mental health indicated that no variable studied could explain the variance in this portion of self-rated health status.

The third model of variance that utilized experimental group physical health indicated IADL as responsible for explaining only 22.4% variance in this portion of self-rated health status.

<table>
<thead>
<tr>
<th>Step</th>
<th>Variable entered</th>
<th>R squared change</th>
<th>p value of R squared change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>IADL score</td>
<td>.22</td>
<td>&lt;.01</td>
</tr>
</tbody>
</table>

Predict Physical Health = 3.326 x IADL + 31.339
Total variance explained 22.4%  
F=11.538

Table 4.9: Model Variance to Predict Self-Rated Physical Health in the Experimental Group.

The final model of variance that used experimental group mental health indicated independence as responsible for explaining the largest amount of variance (13.6%). The remainder of the variance was explained by the BSE score (8.8%) of the experimental
group regressed on their mental health score. Together these two variable scores only explain 22.4% of total variance in this portion of self-rated health status.

<table>
<thead>
<tr>
<th>Step</th>
<th>Variable entered</th>
<th>R squared change</th>
<th>p value of R squared change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Independence score</td>
<td>.14</td>
<td>.02</td>
</tr>
<tr>
<td>2</td>
<td>BSE score</td>
<td>.09</td>
<td>.04</td>
</tr>
</tbody>
</table>

Predict Mental Health = 3.020 x Independence score + 2.597 x BSE score + 32.861
Total variance explained 22.4%  F= 5.641

Table 4.10: Model Variance to Predict Self-Rated Mental Health in the Experimental Group.

Therefore, the last statistical hypothesis proposed should be handled in the following manner:

5. A significant portion of variance in an elderly woman’s self-rated health status is explained by stepwise combination of the tested independent variables is confirmed. Combination of independent variable measures provided by the control and experimental groups identified statistically significant independent variables that explained some variance in the dependent variable. However in both groups, using multiple combinations, the maximum variance that was explained did not exceed 44 % of the variance in any portion of self-rated health status.
CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

INTRODUCTION

This research endeavor developed due to the propensity for elderly women to develop advanced breast cancer. The hypothesis was that breast self-examination (BSE) as an adaptive health behavior could influence health and promote longevity in older women. To that end, a quasi-experimental study was devised to discover if elderly women could retain BSE knowledge and if so, gauge its influence on the self-rated health status of elderly women. Additional variables were thought to be influential to the self-rated health of elderly women and they were breast cancer risk, individual competence, and environmental press. These additional variables were incorporated into the study.

The Older Women’s Health Survey was constructed to collect data that could be used to measure the variables under consideration. This data was collected using two selected groups of elderly female participants; one experienced an educational treatment (BSE) while the other group of older women acted as a control. The four constructs measured in this study were: BSE knowledge, risk assessment of breast cancer, individual competence (IADL score), and environmental press (SCES scores).
These variables with their associated scores provided metric data that was used to describe the two groups of participants, compare the two groups, and determine the relationships between the variables. It was also important to isolate the variables which would be best in explaining the variance in self rated health status for both groups of participants.

This chapter will include the following sections: Summary of Sample, Summary of Findings, Discussion of Study Results, Conclusions, Limitations, Recommendations for Future Research, and Implications for Health Care Professionals.

SUMMARY OF THE SAMPLE

The elderly women who participated in this study came from eleven different assisted living facilities. The facilities were randomly assigned into an experimental or control group for the study. Although 100 women participated in the study, only 42 of the 50 experimental women returned useable surveys for scoring. This represented an 84% response rate of return.

The sample was composed of 92 elderly women whose minimum age was 75 and maximum age was 95 years of age. The mean age for participation was 82 years of age. The two groups were considered comparable based on their age composition.

The literature review described a possibility for elderly women to be excluded from some types of preventative health measures. The survey instrument was used to collect descriptive data about barriers to other preventative health measures for these women. The availability to obtain a clinical breast exam (CBE) for an elderly woman was one measure explored to determine if a barrier existed for the participants surveyed. A question was provided in the survey to obtain the time frame for receiving a CBE.
The average response was that most participants had had a CBE 6 months ago. The literature also indicated that elderly women of this age had difficulty obtaining a medical check-up with a physician or health care provider. A question was provided to obtain information from the elderly women in this study as to their ability to obtain a medical check-up from their physician. The response from the group indicated the average was a medical check up within the last 6 months. Additionally, no differences on these descriptive areas were noted between the control and experimental groups.

SUMMARY OF FINDINGS

The following section will provide an overview of the findings from this study. Descriptive data was analyzed to address the hypothesis that BSE might be an influence on self-rated health status. The mean scores from the BSE questions on the Older Woman’s Health Survey indicated that the experimental elderly women had a higher score on BSE knowledge than the control elderly women.

Further data analysis helped to address the research questions posed prior to the beginning of the study.

1. Does knowledge about a preventative health behavior such as BSE contribute to the self-rated health status among elderly women?

BSE knowledge did demonstrate a correlation between one measure of self-rated health status for each of the groups. The experimental group of women demonstrated a statistically significant direct correlation of BSE knowledge with their mental health scores. Refer to Table 5.1 Statistically Significant Correlations with Self-reported Health Status. Interestingly, the control subjects also demonstrated a correlation between BSE knowledge and one measure of self-rated health. The control subjects’ scores for BSE
knowledge were inversely related to their physical health score. This correlation was statistically significant and could be interpreted for the control group of elderly women that a rating of increased physical health was coupled with a reduced level of knowledge about how to conduct BSE. With the experimental elderly women, BSE knowledge in combination with independence explained about 8.8% of the variance in their mental health scores.

<table>
<thead>
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<th></th>
<th>Experimental</th>
<th>Control</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Physical health score</td>
<td>Mental health score</td>
</tr>
<tr>
<td>BSE</td>
<td>.35*</td>
<td>-.35*</td>
</tr>
<tr>
<td>Comfort</td>
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<td></td>
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<tr>
<td>Independence</td>
<td>.37*</td>
<td>-.29*</td>
</tr>
<tr>
<td>IADL</td>
<td>.47*</td>
<td>.42*</td>
</tr>
<tr>
<td>5 year risk</td>
<td></td>
<td></td>
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<tr>
<td>Lifetime risk</td>
<td></td>
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</tbody>
</table>

*Indicates significant predictor in the stepwise linear regression analyses.

Table 5.1. Statistically Significant Correlations with Self-Rated Health Status.

The model to predict physical health scores from control group data indicated that BSE knowledge in combination with IADL’s contributed 26.9% in explaining variance. Therefore, the knowledge of BSE did contribute in each group to one component of the elderly women’s self-rated health status.
2. For those elderly women in assisted living facilities, what are the risks for breast cancer?

The Gail Model of breast cancer risk was used as the measure for this independent variable in the study. All of the participants were asked to fill out the Gail Model risk assessment profile in order to provide them with their risk for breast cancer. Whether the participant was in the control or experimental group, the risk assessment profile was collected and shared with each elderly woman. It was important to make sure that each elderly woman was aware that she had breast cancer risk and how it compared to a population of other elderly women. This was done prior to the participants filling out the Health of Older Women Survey. A risk score was generated for each group and it was subdivided into a 5-year risk and a lifetime risk for being diagnosed with breast cancer. All the profiles of risk were based on the data obtained by Gail et. al and their population of older women 70 years and older. The mean value for 5-year risk for the control group of elderly women was 2.4 (SD 1.7). The corresponding risk of breast cancer for this same group of women for their lifetime was a mean of 4.7 (SD 4.5). Likewise, the experimental elderly women participated in the Gail Model Assessment for breast cancer risk prior to their educational intervention and the subsequent Health of Older Women Survey. The mean score for 5-year risk of breast cancer among the experimental group was 2.3 (SD 2.3). The lifetime risk for contracting breast cancer was a mean score of 4.0 (SD 2.9) for those elderly women in the experimental group.

The results of this study indicated that both of the groups of elderly women were at relatively low risk for breast cancer at 5-years as well as for lifetime. The groups also indicated a similar risk for both 5-years and lifetime which made them very comparable
in reference to this particular variable. The study participants appear to be at a low risk for breast cancer as a collective group.

3. Is the risk of breast cancer a determinant of their self-rated health status?

Strength of association between risk of breast cancer and the physical health score was measured using the Pearson’s product moment correlation. Studying the control group, 5-year risk of breast cancer and lifetime risk were not significantly correlated with physical health and mental health scores. This same process was applied to the experimental group and the results were that no relationship was indicated between risk assessment and self-rated health status for the experimental group.

4. To what degree does individual competence influence the level of self-rated health status for elderly women?

The variable of individual competence was measured by the use of the IADL scores gleaned from the *Health of Older Women Survey* for both groups of elderly women in the study. The control group had a mean IADL score of 3.2 (1.3 SD), while the experimental group had a mean IADL score of 2.2 (1.5 SD). A two-group comparison was conducted using the t-statistic, which indicated a statistical difference between the groups. The Pearson product moment correlation was used to look for a relationship between the IADL scores for the control respondents and their self-rated health scores. Likewise the same process was applied to the experimental respondents IADL scores to look for a correlation with their self-rated health scores. A direct correlation was found between the IADL scores from both groups and their respective physical health scores.

5. To what degree does environmental press influence the level of self-rated health status for elderly women?
The subscales of the Sheltered Care Environmental Scale were used as part of the survey and the two components chosen were comfort and independence. Comfort and independence scores were collected for both groups of elderly women.

Next a Pearson’s product moment correlation was calculated to determine the relationship between the control group’s comfort and independence with the dependent variable subscales of physical and mental health. This set of correlations yielded a significant inverse relationship between the control group’s score of independence with the physical health score.

The experimental group’s score for comfort and independence was correlated to the physical health scores and mental health scores. Examining the experimental group’s correlations indicated a significant positive association between the independence score and the mental health component of self-rated health status.

This set of correlations indicated that environmental press as measured by the subscale of independence was mildly influential on one component of the self-rated health status in both groups.

6. Which of the independent variables contributes most significantly to self-rated health status?

Step-wise linear regression was used to select variables that might provide significant explanation of the variance in the components of the self-rated health status. First the control group’s scores were regressed on the dependent variable score of physical health. This model demonstrated that IADL scores were responsible for explaining the most variance (17.2%) followed next by BSE knowledge as the next most
important variable score (26.9%). Together the two scores explained 44% of the variance in self-rated health’s physical score among the control subjects. The next model proposed for the control group was the independent variable scores regressed on the dependent variable score for mental health. In this model, no variable was able to explain variance in the mental health component of self-rated health status.

Investigating the experimental subjects and their scores on the independent variables, the stepwise linear regression process was conducted to create a similar model that would explain the variance in self-rated health for the physical health score. This statistical model indicated that only the IADL scores were responsible for explaining variance in the physical health scores among the experimental participants. The variable called individual competence as measured by IADL scores, was responsible for 22% of the variance in the physical health score. Researchers continue to investigate the predictive value of the SF-12 as a reliable measure of physical ability. These research results assist in making a connection between self-rated physical health and the IADL scores. The last model constructed to explain variance in self-rated health was done using the mental health score. In this model, the variance was best explained by the measure of independence as a subscale of environmental press. Independence explained 13.6% of the variance and the next variable that was entered was BSE knowledge. The BSE knowledge score explained 8.8% of the variance in that group’s mental health scores. Together, independence and BSE knowledge score explained a total of 22.4% of the variance in the mental health score portion of the self-rated health status. Although a combination of the independent variables explained some variance in self-rated health status, the variance explained is no greater than 44%.
These results indicate that for the control group IADL and BSE knowledge were able to explain the variance in only the physical health score. In the experimental group, IADL scores explained a portion of the physical health score while independence and BSE scores explained a portion of the variance in mental health score. Reviewing the results of all the variables investigated, IADL and BSE scores were influential in both groups with regard to one component of self-rated health status. Independence was influential with regard to the mental health scores for only the experimental participants.

DISCUSSION OF STUDY RESULTS

This research endeavor began with the desire to promote preventative health behaviors against the backdrop of advanced breast cancer in older women. BSE was hypothesized to be a potential method to influence self-rated health status in older women and perhaps extend longevity. This research investigated BSE as a health behavior in conjunction with some concomitant factors such as breast cancer risk, individual competence, and environmental press to determine their influence on self-rated health status.

In the process of recording survey data, descriptive data was collected on health behaviors such as CBE and medical check-ups. As earlier discussed, the participants indicated having frequent medical check-ups with a health care provider or physician. Along with this health behavior was the issue of access for older women to CBE. Reviewing the specific data that was collected on the current participants, it appeared that 26% of the respondents had been given a CBE last year and another 30% responded to having had a CBE within the last six months. The literature review described barriers for older women obtaining CBE. One recent study described a medical chart review of
primary care physicians, in which, 75% of a random sample of 130 women aged 65 to 80, received a CBE over a two year period (Tishler, McCarthy, et. al., 2000). The data on the current research participants indicated that 68.5% of the participants obtained a CBE over a similar two-year period. This kind of descriptive data indicated a very good percentage of participation in CBE. In comparison to the Tishler study, the descriptive data in the current study is encouraging. However, it demonstrates that these participants could be afforded improvements in access to obtaining CBE. One additional issue regarding the health care of elderly women was explored and it was the frequency of medical check-ups reported by these participants. As a collective group, the descriptive data suggests that 62% of the participants have visited a physician for a check up within the last six months. In many ways, the participants of this study are older than in previously reported studies yet they indicated a high rate of CBE participation as well as attendance for medical check-ups. As a total group, the older women in this study obtained CBE and medical check-ups in accordance with suggested guidelines despite any barriers that may have existed.

Reviewing the quantitative data and analysis of the responses from the older women in this study, BSE appeared to be a worthy endeavor and may have some influence on their self-rated health status. This is based on the indication that the experimental participants demonstrated a statistically significant difference in knowledge than those women in the control group who did not receive any instruction on BSE. These results are mirrored in a recent study that was similarly constructed. The study used video kits about BSE to instruct an experimental and a control group of 328 women 60 years and older (Wood, Duffy, Morris, et. al. 2002). This study demonstrated a
similar increase in knowledge of BSE among the experimental group who had received the video kits of BSE instruction.

The statistics that were generated described the average participant in the control group, as someone having some breast cancer risk coupled with an increased ability to perform independent activities of daily living. The independent activities of daily living were directly related to self-rated health status. The control group also indicated an inverse relation between knowledge about BSE and their physical health score. Unfortunately, these women did have risk of breast cancer just by virtue of their advanced age and having less BSE knowledge may not be in keeping with continued good health and productivity. Interestingly, a recent study looked at the death rates among women who did and did not reportedly practice BSE. No differences existed in mortality between those who did and those who did not practice BSE (Hackshaw and Paul, 2003). What was noted in the Hackshaw study was an association for those who did practice BSE to seek out medical advice and have breast biopsies more frequently than those who didn’t practice BSE. BSE continues to be a controversial in regard to being a viable prevention technique for breast cancer and whether it promotes good health. Continued research is needed to ascertain the importance of not only practice but knowledge of BSE.

Two variables that were included in the original research model that were hypothesized to have influence on self-rated health status were breast cancer risk and the environmental press subscale of comfort. These two measures did not prove to have any influence on self-rated health status.

Individual competence was linked to self-rated health status through the work of
Wilson and Cleary, which was an important part of the theoretical model that did subsequently prove to be significant. IADL scores, as a measure of individual competence, were significantly different between the control group and the experimental group of elderly women. The control group had a higher score on the IADL assessment than the experimental group but, never the less, the IADL scores for both groups indicated a direct correlation with the physical health scores. The IADL score predicted variance in the physical health scores in both groups.

Independence as one of the subscales of environmental press that did prove to be important by participants. Independence indicated a direct relationship with the mental health scores of the experimental group but it had the reverse effect on the control group’s physical health scores. Independence was also instrumental in explaining a small portion of the variance in the mental health score for the experimental participants. The control group had a higher physical health score than the experimental group and the measures of mental health were relatively similar.

Some comparisons could be made of these study participants’ self-rated health scores to those participants that have been previously evaluated by the SF-12. Ware’s norms for the general U.S. population of females (N=1,332), indicated a physical health score mean of 49.1 (SD 9.9) and a mental health score mean of 49.4 (SD 9.8) (Ware, 2002). The current study participants by contrast have lower physical health scores (control 46.4 and experimental 38.8). However, the current study participants have slightly higher mean mental health scores than the U.S. population of females (control 51.8 and experimental 50.1). Additional comparisons can be made between these study participants and Ware’s norms for the U.S. population of people age 75 and older (N=
217) (Ware, 2002). The norm population of people 75 + years of age had a mean physical health score of 38.7 (SD 11.0) and a mean mental health score of 50.1 (SD 11.0). In this comparison, the control participants indicated a higher mean physical health score than the national norm of persons 75 + years but the experimental participants indicated a similar mean physical health score as the national norm. Considering all the older women in this study, they indicated a similar mean mental health score compared to the national norm of persons 75+ years. These comparisons have to be considered carefully as the national norms were collected from men and women in this age group and the norms were based on a sample of only 217 respondents. The only study that looked carefully at this same age group of women and recorded similar results used a longitudinal research study design to measure self-rated health. Although this study recorded similar results, it is difficult to relate their results due to differences in research design (Holahan and Sears, 1999).

In this study the research participants indicated a difference on the physical health score between the groups. The fact that the difference between the groups was statistically significant related to a similar difference in the IADL scores. IADL scores were directly related to the physical health scores of both control and experimental groups.

The physical health score was related inversely to BSE knowledge for the control group of respondents. In this case, the less knowledge of BSE the higher the physical health score for the participant. The experimental participants indicated a direct relationship between BSE knowledge and their mental health score.
CONCLUSIONS

The descriptive data that was obtained from this group of older women indicates that CBE participation is good but could be improved. The participants also indicated, that they obtain a medical check-up more often than what has been reported in the literature. Caution must be exercised that these descriptive results are specific to this group of older women.

It is important to note that the control group of older women indicated a somewhat higher mean physical health score of 46.4 than the published national norms of 43.7 for the SF-12. The control group indicated a higher physical score than the national norm of participants age 75 years and older (38.7). Since this control group of older women indicated a higher self-reported health status than the national norms, these statistical results may be describing a different group of older women.

The statistical results indicated the importance of individual competence, as measured by IADL, in explaining the physical health portion of self-rated health in both groups of elderly women. BSE knowledge was influential for both groups by contributing negatively to physical health in the control group and positively in the experimental group’s mental health portion of self-rated health status. Lastly, the independence scores as a measure of environmental press indicated a positive relationship on the experimental group’s mental health score but indicated a slightly negative relationship for the control group’s physical health score. Since these variables demonstrated a significant relationship as well as explained some variance in the dependent variable, an amended theoretical model is provided. See Figure 4.: A Depiction of the Model Based on the Results of the Factors Influencing the Self-rated
Health Status of Older Women within the Control Group and Figure 5.: A Depiction of the Model Based on the Results of the Factors Influencing the Self-rated Health Status of Older Women within the Experimental Group.

LIMITATIONS

The limitations of this study are inherent to the study’s initial design. The assisted living facilities represent a convenience sample of communities in the geographical area within which this study was situated. The facilities were randomly assigned making the selection process the best method since complete randomization was not possible. Lack of complete randomization is an internal threat and poses a limitation to this study. An additional design threat to internal validity is the interaction of selection and maturation etc. but with the age of the participants in this study, this threat seemed to be negligible.

External validity is challenged in this research design by the interaction of testing and treatment. The possibility of having provided the risk assessment percentages to all the study participants could have influenced them to retain information and inflated the BSE knowledge scores. This possibility, although built into the study to incorporate risk as a potential variable, could limit the generalizability among unpretested older women in the population. Additionally, multiple treatment interference was a possibility due to the lack of control over a participant having had prior experience with BSE instruction or information that could have contaminated the study during the 8-week interval of the data collection. The majority of this study’s participants were white elderly women from high social economic standards of living. These demographic characteristics also limit the generalizability of these results to a more varied population of elderly women. The lower strength of the correlations and the smaller percentage of variance explained also
Figure 4.: A Depiction of the Model Based on the Results of the Factors Influencing the Self-rated Health Status of Older Women within the Control Group.
Figure 5. A Depiction of the Model Based on the Results of the Factors Influencing the Self-rated Health Status of Older Women within the Experimental Group.
should temper the ability to generalize these results beyond the group of older women surveyed.

Finally, there are were some variables that made the control group of older women different in comparison to the experimental group, so the conclusions of this research need to be viewed in that context.

RECOMMENDATIONS FOR FUTURE RESEARCH

The following is a list of recommendations for future research based on the researcher’s experience from this study:

1. Diversify the sample. It would be beneficial to increase the number of participants and expand the geographical area of the data collection. Expanding the kinds of participants and area of a subsequent study would allow for a better ability to generalize the results. One suggestion for how to expand the study would be to contact assisted living facilities in a multi-state region so that the study would be manageable yet more indicative of a diverse population of older women of varied backgrounds. Increasing diversity will help to insure that the research results are truly representative of a broader population of elderly women. Getting participation within assisted living facilities proved to be more difficult that earlier expected so a focused effort that begins six months prior to data collection will be important to insure good response rates from the facilities.

2. Reexamine the Gail model of breast cancer risk. The Gail model was used in this study as a means to calculate breast cancer risk for women with certain factors in their history. Using this model for the risk assessment portion of the study, it was interesting to find that only small numbers of participants had been used to project the
risk prediction for those women over 80 years of age. For this reason, the Gail model needs additional data to allow participants beyond 80 years of age a better prediction of breast cancer based on larger numbers of Caucasian women of that age. Having no racially diverse predictive data was frustrating. This particular study had a majority of Caucasian participants but future studies in breast cancer risk need data on older women of color to be truly representative. As the baby boom generation comes closer to the retirement age, there will be a larger and more diverse cohort that needs better methods to estimate risk for breast cancer. One way to collect this data would be to intentionally recruit more inner city retirement communities so that older women of color might be targeted to increase the data set for predicting their risk of breast cancer.

3. Examine additional variables that are related to self-rated health status. It will be important to expand the kinds of variables considered in a replication of this study. Independence, BSE knowledge, and individual competence were the variables that collectively explained less than 50% of the variance in self-rated health status. This indicates that other factors that are yet to be identified as being influential in an older woman’s estimate of her health. It would be beneficial to build on this research by incorporating variables such as social economic status or educational level to find more of the contributory factors that relate to self-rated health status in the older woman.

4. Explore the prolonged effect of BSE with older women. This study’s time limit was 8 weeks for the collection of data with the *Older Woman’s Health Survey*. Perhaps this was too short a timeframe to ascertain the relationship of BSE knowledge and the
other study variables on self-rated health status. A follow-up study to this one would allow for added data collection at six months and one year from the educational intervention. This might prove to be more informative about the lasting relationship of the BSE educational intervention. Another option would be to choose an alternate research design and one suggestion would be to use a research design that was more longitudinal in implementation. This would allow for a prolonged engagement with the research subjects. A longitudinal study design would also allow for more data to be collected relevant to the lasting effects of BSE as an intervention on self-rated health status with older women in assisted living environments.

5. Initiate a qualitative interview as part of the data collection. This study was quantitative in design; however to isolate additional variables that might prove influential to self-rated health status, a series of qualitative interviews might bring to light additional influences that could be investigated. Returning to these study participants would allow for a fresh perspective on additional influences that have yet to be studied and developing some open-ended interview questions to promote the older women to discuss their concept of health. This might result is a very descriptive study which could locate new variables for quantitative evaluation.

6. Utilize the descriptive information about medical check-up and CBE. Since these older women indicated a good track record for obtaining a CBE as well as a medical check-up with a physician, these might be potential variables in a replication of this study. In a future endeavor, these potential variables could be surveyed with a group of similar aged women to see if this is just a random phenomenon or if a relationship exists between participation in preventative health activities and the rating for self-
rated health status. Incorporating additional variables to the research model suggested may allow more of the variance to be explained in self-rated health status than was presently defined.

7. Investigate the national norms for the SF-12 based on older women 75 years and older. Unfortunately, the only published national norms for the SF-12 are based on physical health score and mental health score are for men and women 75 years and older and this makes generalizations difficult. With the large number of baby boomers quickly reaching advanced age, this data collection is urgently needed. Ware’s sample population for the national norm for U. S. people 75 years and older was 217. It will be imperative to expand this kind of data collection in order to further the research efforts for this age group and for older women. The SF-12 was easy to administer to the participants of this study so any expansion of this type of data collection for this age group should be encouraged.

IMPLICATIONS FOR HEALTH CARE PROFESSIONALS

Although this study has its limitations, there are some salient points that can be gleaned from the research to guide health care professionals in caring for elderly women who are at risk for breast cancer.

The descriptive data that was collected for this study provides some evidence that, for this group of older women, CBE and access to a physician for a medical check-up occurred more often than what was expected compared to previous studies provided in the literature. Although this data is indicative of only this group of older women, it could be a good starting place for continued research and improvements in health care
practice to discover if these and other study variables could have stronger influence than expected.

This study indicated that the older women who experienced BSE training were able to answer on average 3.5 out of 5 questions correctly after 8 weeks of instruction. Although studies continue to insist that BSE is no more beneficial than for those who do not practice BSE, additional research is needed. Some benefits may be realized since the information that was retained did correlate with the experimental participants’ mental health scores. Although other factors obviously contribute to an older woman’s self-rated health status, BSE appeared to provide a challenge as well as a connection as a health education strategy. The control group’s indication of BSE knowledge is perplexing as to the reason they did not acquire as much information about BSE as the experimental group. The control group indicated on average that high levels of self-rated physical health were inversely related to BSE knowledge. This provides a challenge to health care professionals to provide BSE information not only to those older women who are having difficulties with their health but also to those who indicate having great health. The positive connection that BSE knowledge had with self-rated mental health makes it worth further investigation as a patient education strategy. Perhaps a connection between BSE knowledge and self-rated mental health could become a new avenue of inquiry. A great deal of focus has been on BSE’s influence on physical health but this connection provides a potential for a new research focus.

This study also indicated a stronger relationship between independent activities of daily living and the participants’ physical health score. The positive contribution that the IADL score has on physical health scores as well as explaining a portion of the variance
in physical health scores makes it worthy of continued consideration. Initiatives to promote older women to remain active and performing more of their independent daily activities appears to be an important message as a result of this study. This information could be significant for health care professionals as they design specific activity and educational programs for older female residents in assisted living. Advocating for older women to do more of their independent daily activities such as shopping, transportation and preparing their medications may be an important component to maintaining good physical health. There may be additional benefits to activity for these women that will enhance the way they feel about their overall health status.

Lastly the independence scores were positively related to the mental health score of the experimental participants and although it was a low correlation, this might be an important issue to advocate. Continued independence may have an influence on older women’s self-rated health. Continued investigation into the linkage of independence among older women and their health could be helpful as the demographics of the US population shifts in favor of more elderly individuals.
LIST OF REFERENCES


APPENDIX A

E-MAIL PERMISSION TO USE THE SF-12
Subj: Permission to Use
Date: 1/24/00 8:58:48 AM Eastern Standard Time
From: pgagnon@qmertic.com (John Ware)
To: Evans1RDMS@aol.com

Monday, January 24, 2000

M.S. Kevin D. Evans
Graduate Student
The Ohio State University
The School of Allied Professions
Allied Medical Professions Building
1583 Perry Street
Columbus, OH 43210-1234

Regarding your project: Health perceptions of elderly women having learned breast self exam

Dear M:

I am happy to grant you permission to use and reproduce the SF-12 or SF-36 Health Surveys, subject to the following terms and conditions.

Permission to use the SF-36 and SF-12 is granted royalty free for individual research and institutional non-commercial use. This permission does not extend to reproduction or transmission of the instrument(s), scoring algorithm(s), and/or normative data on a computer network, Intranet, Internet server, or Interactive Voice Recognition (IVR) system. It also does not extend to those wishing to re-sell, sub license, or otherwise distribute the SF-36 or SF-12 survey forms or scoring algorithms as part of their product or service offerings (whether or not a fee is charged). Such use requires a special license, and interested parties should write license@qmertic.com for more information (see the bottom of this message for a description of the various commercial and non-commercial licenses available).

We have added you to our mailing list and will also forward your name and address to the Medical Outcomes Trust (MOT). We encourage you to become an MOT member.

Sincerely,

John E. Ware, Jr., Ph.D.
President and Chief Executive Officer
QualityMetric, Inc.

Cultive Director, Health Assessment Lab
APPENDIX B

SURVEY INSTRUMENT: THE OLDER WOMAN’S HEALTH SURVEY
THE HEALTH OF OLDER WOMEN

This questionnaire will ask you for your views about your own health. This information will help researchers track how older women feel and how well they are able to do their usual activities.

THIS INFORMATION IS STRICTLY CONFIDENTIAL. WE WILL NOT DISCLOSE THE IDENTITY OF THE PERSON FILLING OUT THIS FORM. AS THE PRINCIPAL INVESTIGATOR, I WILL BE THE ONLY ONE AWARE WHO HAS FILLED OUT A FORM AND THAT IS ALL.

Answer every question by checking the most appropriate selection. If you are not sure about how to answer a question, please give the best answer you can.

1. When was your last medical check-up with a physician?

   None   Unsure   More than two years ago   Two years ago   Last year   Six months or less

2. In general, would you say that your health is:

   Excellent   Very good   Good   Fair   Poor
The following terms are about activities you might do during a typical day. Does your health now limit your activities? If so, how much?

3. Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf.

<table>
<thead>
<tr>
<th>Yes, Limited</th>
<th>Yes, limited</th>
<th>No, not limited</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Lot</td>
<td>A little</td>
<td>At all</td>
</tr>
</tbody>
</table>

4. Climbing several flights of stairs.

<table>
<thead>
<tr>
<th>Yes, Limited</th>
<th>Yes, limited</th>
<th>No, not limited</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Lot</td>
<td>A little</td>
<td>At all</td>
</tr>
</tbody>
</table>

Please check your responses to the following questions about your health.

During the past 4 weeks, have you had either of the following problems? with your work or other regular daily activities as a result of your physical health?

5. Accomplished less than you would like.

| Yes | No |

6. Were limited in the kind of work or other activities.

| Yes | No |
During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

7. Accomplished less than you would like

Yes
No

8. Didn’t do work or other activities as carefully as usual

Yes
No

9. During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?

Not at all
A little bit
Moderately
Quite a bit
Extremely

These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please circle the answer that comes closest to the way you have been feeling.

How much of the time during the past 4 weeks........

10. Have you felt calm and peaceful?

All of the time
Most of the time
A good bit of the time
Some of the time
A little of the time
None of the time
11. Did you have a lot of energy?

<table>
<thead>
<tr>
<th>All of the time</th>
<th>Most of the time</th>
<th>A good bit of the time</th>
<th>Some of the time</th>
<th>A little of the time</th>
<th>None of the time</th>
</tr>
</thead>
</table>

12. Have you felt downhearted and blue?

<table>
<thead>
<tr>
<th>All of the time</th>
<th>Most of the time</th>
<th>A good bit of the time</th>
<th>Some of the time</th>
<th>A little of the time</th>
<th>None of the time</th>
</tr>
</thead>
</table>

13. During the *past 4 weeks*, how much of the time has your physical health interfered with your social activities (like visiting with friends, relatives, etc.)?

<table>
<thead>
<tr>
<th>All of the time</th>
<th>Most of the time</th>
<th>Some of the time</th>
<th>A little of the time</th>
<th>None of the time</th>
</tr>
</thead>
</table>

---

*The following section contains questions relating to breast care and breast evaluation to detect lumps or alterations.*

14. When was the last time you examined your breasts for lumps or changes?

- Never
- Several years ago
- One year ago
- 6 months ago
- During the last 4 weeks
15. When examining your right breast, which hand is the best to search for changes in the tissue?
   a. right hand  b. left hand  c. both hands

16. What part of the hand is used to successfully conduct the BSE technique?
   a. whole hand  b. three fingers  c. palm  d. thumb and index finger

17. When examining your breast, do you also feel the armpit area?
   a. yes  b. no

18. Please check off the number of minutes it take you to do BSE?
   a. Less than two minutes  
   b. About two to five minutes  
   c. About six to ten minutes or more

19. When examining the breast is it important to gently squeeze the nipple area?
   a. yes  b. no

This section asks you mark the level of help you need with daily activities.

20. Using the telephone to dial a number, answer a call, or using the phone book requires:
   a. No assistance
      __________
   b. Assistance needed
      __________
   c. Someone takes care of this for you
      __________
21. Using a car or bus for transportation requires:
   a. No assistance
   b. Assistance needed
   c. Someone takes care of this for you

22. Shopping for clothes or food requires:
   a. No assistance
   b. Assistance needed
   c. Someone takes care of this for you

23. Preparing and taking your medication requires:
   a. No assistance
   b. Assistance needed
   c. Someone takes care of this for you

Please circle the correct answer about the facility in which you have chosen to live.

24. Can residents have privacy whenever they want?
   a. Yes
   b. No
25. Are the residents taught to how to deal with practical problems?

   a. Yes
   b. No

26. Are residents strongly encouraged to make their own decisions?

   a. Yes
   b. No

27. Are some of the resident’s activities really challenging?

   a. Yes
   b. No

28. Do the residents usually depend on the staff to set up activities for them?

   a. Yes
   b. No

29. Is the furniture here comfortable and homey?

   a. Yes
   b. No

30. Is the lighting very good here?

   a. Yes
   b. No

31. Is it ever hot and stuffy in here?

   a. Yes
   b. No
32. Please list your age for the purpose of the study: _______ years old.

33. When was the last time you had your breasts examined by a physician or other health care provider?

Never    Unsure    Several years    Two years    Last year    Six months ago    ago

________________________________________________________________________

Please list any questions or issues that are important to consider that have not been asked in this questionnaire.
APPENDIX C

FREQUENCY VALUES FOR ITEMS MEASURING THE HEALTH OF THE OLDER WOMAN
Table C1: Frequency Values for Items Measuring Older Women’s Health

<table>
<thead>
<tr>
<th>Item</th>
<th>N</th>
<th>None</th>
<th>Unsure</th>
<th>&gt;2yrs</th>
<th>2yrs</th>
<th>Last yr</th>
<th>6 mo&lt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. When was your last medical check-up with a physician?</td>
<td>92</td>
<td>2</td>
<td>0</td>
<td>4</td>
<td>11</td>
<td>18</td>
<td>57</td>
</tr>
<tr>
<td>2. In general, would you say that your health is:</td>
<td>92</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Items</td>
<td>N</td>
<td>Excel</td>
<td>Very good</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
<td></td>
</tr>
<tr>
<td>3. Does your health now limit your activities in terms of moderate activities such as moving a table, pushing a vacuum, etc.</td>
<td>92</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Climbing several flights of stairs</td>
<td>92</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Items</td>
<td>N</td>
<td>Yes, limited a lot</td>
<td>Yes, limited a little</td>
<td>No, not limited at all</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. During the past 4 weeks, as a result of your physical health, accomplished less than you would like?</td>
<td>92</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Were you limited in the kind of work or other activities?</td>
<td>92</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. During the past 4 weeks, as a result of any emotional problems, accomplished less than you would like?</td>
<td>92</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Didn’t do work or other activities as carefully as usual?</td>
<td>92</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Items</td>
<td>N</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. During the past 4 weeks, how much did pain interfere with your normal work?</td>
<td>92</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>N</td>
<td>Not at All</td>
<td>A little bit</td>
<td>Moderately</td>
<td>Quite a bit</td>
<td>Extremely</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Items</td>
<td>N</td>
<td>All of the time</td>
<td>Most of the time</td>
<td>A good bit of time</td>
<td>Some of the time</td>
<td>A little of the time</td>
<td>None of the time</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
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<td>-------------------</td>
<td>------------------</td>
<td>---------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>10. How much of the time during the last 4 weeks have you felt calm</td>
<td>92</td>
<td>21</td>
<td>26</td>
<td>19</td>
<td>17</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>11. Did you have a lot of energy?</td>
<td>92</td>
<td>15</td>
<td>17</td>
<td>25</td>
<td>26</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Items</td>
<td>N</td>
<td>All of the time</td>
<td>Most of the time</td>
<td>A good bit of time</td>
<td>Some of the time</td>
<td>A little of the time</td>
<td>None of the time</td>
</tr>
<tr>
<td>12. Have you felt downhearted and blue?</td>
<td>92</td>
<td>1</td>
<td>0</td>
<td>7</td>
<td>15</td>
<td>40</td>
<td>29</td>
</tr>
<tr>
<td>13. How much has your physical health interfered with your social activities?</td>
<td>92</td>
<td>1</td>
<td>8</td>
<td>0</td>
<td>8</td>
<td>20</td>
<td>55</td>
</tr>
<tr>
<td>Item</td>
<td>N</td>
<td>Never</td>
<td>Several years ago</td>
<td>One year ago</td>
<td>6mons ago</td>
<td>During the last 4 weeks</td>
<td></td>
</tr>
<tr>
<td>14. When was the last time you examined your breasts for lumps or changes?</td>
<td>92</td>
<td>8</td>
<td>9</td>
<td>9</td>
<td>20</td>
<td>46</td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>N</td>
<td>Right hand</td>
<td>Left hand</td>
<td>Both hands</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. When examining your right breast, which hand is the best to search for changes in the tissue?</td>
<td>92</td>
<td>17</td>
<td>68</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>N</td>
<td>whole hand</td>
<td>three fingers</td>
<td>palm</td>
<td>thumb and index fingers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. What part of the hand is used to successfully conduct the BSE technique?</td>
<td>92</td>
<td>31</td>
<td>52</td>
<td>4</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>N</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. When examining your breast, do you also feel the armpit area?</td>
<td>92</td>
<td>69</td>
<td>23</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>N</td>
<td>Less than 2 mins</td>
<td>2 to 5 mins</td>
<td>6 to 10 mins or &gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. Please check off the number of mins. it takes you to do BSE?</td>
<td>92</td>
<td>35</td>
<td>38</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

129
<table>
<thead>
<tr>
<th>Item</th>
<th>N</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>19. When examining the breast, is it important to gently squeeze the nipple area?</td>
<td>92</td>
<td>66</td>
<td>26</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Items</th>
<th>N</th>
<th>No assistance</th>
<th>Assistance needed</th>
<th>Someone takes care of this for you</th>
</tr>
</thead>
<tbody>
<tr>
<td>20. Using the telephone to dial a number, answer a call, or using the phone book requires:</td>
<td>92</td>
<td>82</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>21. Using a car or bus for transportation requires:</td>
<td>92</td>
<td>51</td>
<td>21</td>
<td>20</td>
</tr>
<tr>
<td>22. Shopping for clothes or food requires:</td>
<td>92</td>
<td>58</td>
<td>15</td>
<td>19</td>
</tr>
<tr>
<td>23. Preparing and taking your medication requires:</td>
<td>92</td>
<td>64</td>
<td>11</td>
<td>17</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Items</th>
<th>N</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>24. Can residents have privacy whenever they want?</td>
<td>92</td>
<td>89</td>
<td>3</td>
</tr>
<tr>
<td>25. Are the residents taught how to deal with practical problems?</td>
<td>92</td>
<td>61</td>
<td>31</td>
</tr>
<tr>
<td>26. Are residents strongly encouraged to make their own decisions?</td>
<td>92</td>
<td>83</td>
<td>9</td>
</tr>
<tr>
<td>27. Are some of the resident’s activities really challenging?</td>
<td>92</td>
<td>39</td>
<td>53</td>
</tr>
<tr>
<td>28. Do the residents usually depend on the staff to set up activities for them?</td>
<td>92</td>
<td>69</td>
<td>23</td>
</tr>
<tr>
<td>29. Is the furniture here comfortable and homey?</td>
<td>92</td>
<td>87</td>
<td>5</td>
</tr>
<tr>
<td>30. Is the lighting very good here?</td>
<td>92</td>
<td>86</td>
<td>6</td>
</tr>
<tr>
<td>31. Is it ever hot and stuffy in here?</td>
<td>92</td>
<td>29</td>
<td>63</td>
</tr>
<tr>
<td>32. Please list your age:</td>
<td>92</td>
<td>mean age 82</td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>N</td>
<td>Never</td>
<td>Unsure</td>
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<tr>
<td>33. When was the last time you had your breasts examined by a physician or other health care provider?</td>
<td>92</td>
<td>4</td>
<td>16</td>
</tr>
</tbody>
</table>
APPENDIX D

OHIO STATE UNIVERSITY INSTITUTIONAL REVIEW BOARD APPROVAL
Research Involving Human Subjects
ACTION OF THE INSTITUTIONAL REVIEW BOARD

<table>
<thead>
<tr>
<th>Full Committee Review</th>
<th>X</th>
<th>Original Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expedited Review</td>
<td></td>
<td>Continuing Review</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Amendment</td>
</tr>
</tbody>
</table>

With regard to the employment of human subjects in the proposed research protocol:

2003B0125
Knowledge of Breast Self-Examination and Other Determinants Effect on the Self-Rated Health Status of Elderly Women, R. Cory Bates, Kevin Evans, PAES

The protocol was APPROVED WITH THE FOLLOWING CONDITIONS by means of expedited review (category 7) on May 21, 2003.

THE BEHAVIORAL AND SOCIAL SCIENCES HUMAN SUBJECTS IRB HAS TAKEN THE FOLLOWING ACTION:

<table>
<thead>
<tr>
<th>APPROVED</th>
<th>DISAPPROVED</th>
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<tr>
<td>X APPROVED WITH CONDITIONS *</td>
<td>WAIVER OF WRITTEN CONSENT GRANTED</td>
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</table>

* Conditions stated by the IRB have been met by the Investigator and, therefore, the protocol is APPROVED.

- No procedural changes may be made without prior review and approval from the IRB.
- You are reminded that you must promptly report any problems to the IRB.
- You are also reminded that the identity of the research participants must be kept confidential.
- It is the responsibility of the principal investigator to retain a copy of each signed consent form for at least three (3) years beyond the termination of the subject’s participation in the proposed activity. Should the principal investigator leave the University, signed consent forms are to be transferred to the Human Subjects IRB for the required retention period.

Date: May 21, 2003
Signed: [Signature]

Thomas E. Night, Chair
APPENDIX E

PETITION FOR APPROVAL OF RESEARCH INVOLVING BEHAVIORAL AND SOCIAL SCIENCES
Title Page

APPLICATION FOR REVIEW OF PROPOSED RESEARCH BY THE BEHAVIORAL AND SOCIAL SCIENCES INSTITUTIONAL REVIEW BOARD (IRB)

The Ohio State University, Office of Research Risks Protection
310 Research Foundation Bldg., 1960 Kenny Road
Columbus, OH 43210

For office use only

<table>
<thead>
<tr>
<th>Protocol Title</th>
<th>Knowledge Of Breast Self-Examination And Other Determinants Effect On The Self-Rated Health Status Of Elderly Women.</th>
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</table>

<table>
<thead>
<tr>
<th>Principal Investigator</th>
<th>Name (first, middle initial, last): Dr. R. Cory Bates</th>
<th>Phone: 292-0102</th>
</tr>
</thead>
<tbody>
<tr>
<td>University Relationship:</td>
<td>Department or College: The College of Education/ Dept of PAES</td>
<td>E-mail: <a href="mailto:Bates.2@osu.edu">Bates.2@osu.edu</a></td>
</tr>
<tr>
<td>x Professor</td>
<td>Campus Address (room, building, street address): 283 Arps Hall 1945 North High Street Columbus, OH 43210</td>
<td></td>
</tr>
<tr>
<td>□ Associate Professor</td>
<td>Signature: X Date:</td>
<td></td>
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<tr>
<td>□ Assistant Professor</td>
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</tr>
<tr>
<td>□ Instructor</td>
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<tr>
<td>□ Other. Please specify. (“Other” categories may require prior approval.)</td>
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<tr>
<th>Co-Investigator</th>
<th>Name (first, middle initial, last): Kevin D. Evans</th>
<th>Phone: (614)-475-6511</th>
</tr>
</thead>
<tbody>
<tr>
<td>University Relationship:</td>
<td>Campus Address (room, building, street address) or Mailing Address: 278 Amfield Court Gahanna, Ohio 43230</td>
<td>E-mail: <a href="mailto:Evans1RDMS@aol.com">Evans1RDMS@aol.com</a></td>
</tr>
<tr>
<td>x Graduate Student</td>
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INTRODUCTION TO THE PROPOSED RESEARCH

1. Provide the date when you propose to begin research and the date when you anticipate that research will be completed.

   Proposed start date: 6/1/03
   Anticipated completion date: 8/1/03

2. Indicate any source(s) of funding for the proposed research. If you are seeking or have received external funding through a sponsored program, provide a complete copy of the proposal that was submitted to the funding agency.

   2a) List agency or program (such as NSF or NIH) from which you are seeking funding

   2b) OSURF proposal or project number (if available)

   N/A

   N/A
2c) Other source of funding (e.g. seed grant, department funds, personal funds)  N/A

3. Does the proposed research involve cancer-related activities?  

If the answer is yes, the investigator must seek approval from the James Cancer Center Clinical Scientific Review Committee (CSRC) as well as from the Human Subjects Institutional Review Board. Contact the CSRC at 293-4976. Attach a copy of their response.

N/A

4. Is the proposed research being conducted in collaboration with agencies, institutions, universities, or persons not named as investigators on the cover page?  

If the answer is yes, identify each collaborator or site and describe their responsibilities in relation to this study.

N/A

DESCRIPTION OF THE PROPOSED RESEARCH

5. Provide a brief description of the background, purpose, and design of your research in response to this question, and attach a research proposal or prospectus.

The focus of this study is to determine if the knowledge of breast self-examination (BSE) as an adaptive health behavior can influence the health status of elderly women. Other factors will also be considered as they could contribute to longevity. BSE is a health behavior that encourages early detection and can be provided to elderly women who may be residing in assisted living facilities. Ultimately the knowledge of BSE, as a detection method, in combination with other health factors could transcend many barriers to contribute to the added health and productivity of elderly women.

An urgent need exists to reduce elderly women’s risk for breast cancer with a possible health behavior that could help in lowering this threat. The knowledge of breast self-examination as a health behavior to prevent advanced breast cancer in an elderly woman could influence longevity even if extenuating health issues exist.

The purpose of this research is to study the effect of breast cancer risk, knowledge of BSE, environmental press, and individual competence factors on the self-rated health status of women, age 75 years and older, residing in a group of assisted living facilities in Franklin County, Ohio. This study will look at whether BSE knowledge could be the most significant contributor to a positive health status based on the data collected.

This research will be conducted with a quasi-experimental design and through random selection; assisted living facilities will be assigned to treatment and control groups. On the participant level, all older women will be provided with their risk of breast cancer as a pretest. In addition, one group of older women will receive BSE instruction as the manipulated intervention and then in 8 weeks be asked to take a survey to gather data on the their knowledge of BSE, environmental press, and individual competence and its impact on their self-rated health status. The control group will also be asked to provide the same exact data, except the BSE instruction will be withheld until after the 8-week interval. This will allow for analysis of the effect of the independent variables effect on the dependent variable.
The major reason for this research effort is to add to the body of knowledge concerning methods that could contribute to the lowering of advanced breast cancer diagnoses in elderly women. It is possible that new knowledge will result relating to the theory of self-rated health status and be made more specific to elderly women.

6. Indicate the setting or location(s) where research will be conducted. Attach letters of support or agreement, as necessary, showing that you have permission to conduct research at that location.

For this research, elderly or old-old women are the population that will be targeted. The setting of this research will be assisted living facilities in the central Ohio area. A purposive group of assisted living facilities will be selected so that two groups can be formed based on similar socioeconomic standards and racial composition. Once these two purposive groups of facilities are formed, they will be randomly selected at the facility level to either a treatment or comparison group. This may allow for a stronger research design and more ability to make the groups comparable. The Activities Directors will be contacted at the selected facilities and they will be asked to recruit the participants for the instruction in BSE. The individual elderly women participants represent a convenient sample. Permission to proceed with research in potential facilities is pending this IRB application.

7. Consider all of the data collection points and the interactions that you will have with the participants. List all of the means you will use to collect data (e.g. instruments, measures, tests, questionnaires, surveys, interview schedules, focus group questions, observations). Provide a short description of the tests, instruments, or measures and provide copies for review.

A copy of the survey instrument is included for review.

8. Indicate whether recruitment of participants and/or data collection will involve the use of any of the following. If your response is “yes,” provide additional information as requested.

8a) Audiotapes, videotapes, or photographs

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<td>X</td>
<td>Yes</td>
<td>No</td>
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How will these media be used? How long do you intend to keep them?

A videotape that is instructional will be used to show how to properly conduct BSE.

Electronic communications (e.g. E-mail, Internet)

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How will these media be used?

N/A

8c) Archival data that is not publicly available

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<td>Yes</td>
<td>X</td>
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What data will you collect? From what sources will you obtain it? How will the data be used in this study?

N/A
9. Does the proposed research require that you deceive participants in any way?

☐ Yes ☐ No

If your response is “yes,” describe the type of deception you will use, indicate why it is necessary for this study, and provide a copy of the debriefing script.

N/A

**BENEFITS AND RISKS**

10. Describe the potential benefits of conducting this research. List the benefits to the participants themselves, contributions to the field of knowledge, and benefits to society as a whole. If the research participants will not receive any direct benefits from participating in this study, indicate this in your response.

The desired outcome is that women 75 years and older will become more knowledgeable about breast self-examination.

11. Respond to the statements below. When responding, consider both the actual and potential risks that could reasonably be expected to occur during the course of the study.

11a) Disclosure of the participants’ responses may place the subjects at risk of **criminal or civil liability**.

☐ Yes ☐ No

11b) Disclosure of the participants’ responses may be damaging to their **financial standing, employability, or reputation**.

☐ Yes ☐ No

11c) Participants may encounter **psychological, social, and/or physical risk**.

☐ Yes ☐ No

11d) Participants may be subjected to **stress** beyond that ordinarily encountered in daily life.

☐ Yes ☐ No

11e) Participants may be asked to disclose information that they might consider to be **personal or sensitive**.

☐ Yes ☐ No

11f) Participants may be presented with materials that they might consider to be **offensive, threatening, or degrading**.

☐ Yes ☐ No

11g) The fact that a person participated in research will be reported to an instructor so that the subject can obtain **research credit**.

☐ Yes ☐ No

11h) As a result of this research, a **permanent record** will be created that will contain information (identifiers) that could reveal a subject’s identity.

☐ Yes ☐ No

If you answered “yes” to any items in question 11, discuss the risk below. Describe the steps you will take to **minimize risk** to the participants.
11d. Having the elderly participants become more familiar with the BSE technique could make them feel some stress about performing the technique and doing it correctly. A registered nurse will be providing the instruction and this should help to lower the anxiety and also answer participant’s personal questions.

11e. Some of the participant responses could be regarded as sensitive and private since the questionnaire asks for their opinions. All data respondents will be coded and the master list of codes will be kept locked for security. The actual data responses will not have any participant names and only the researchers will have access to the master list of participant codes.

13. Describe the steps you will take should a research participant become upset or distressed as a result of their participation in this study. When appropriate, provide a list of community agencies or counseling services so that participants can be directed to assistance as needed. If in your opinion subjects are not likely to become distressed by their participation in this study, then your response should be “does not apply”.

If any participant becomes distressed, that person would be eliminated from the study and given immediate information about contacting their primary care physician to help them get appropriate assistance with their medical concerns.

As part of the instructional program, educational materials that are used in to aide in remembering the BSE technique will be given to each participant and this should also help in reducing undue anxiety.

PARTICIPANTS

14. Indicate the total number of participants that you plan to include or enroll in order to meet the objectives of your study.

100

15. Describe the characteristics of the persons who are eligible to participate in this study. List the selection or exclusion criteria and provide your rationale for using these criteria.

Women who are living in assisted living environments who are age 75 years and older.

16. Do you intend specifically to recruit participants from any of the following groups?

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<tbody>
<tr>
<td>16a)</td>
<td>Pregnant women</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>16b)</td>
<td>Prisoners</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>16c)</td>
<td>Minors (persons under the age of 18)</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

16d) If you checked “yes” to any of the boxes above, describe the methods you will use to provide the special protections to which these groups of participants may be entitled under federal regulation. (The special protections are listed in 45 CFR 46, available at http://ohrp.osophs.dhhs.gov/humansubjects/guidance/45cfr46.htm. Refer to subparts B [pregnant women], C [prisoners], and D [children/minors]).

N/A
17. Provide an estimate of the amount of time that will be requested from each person who participates in this research study (number of sessions, amount of time per session, and duration or period of time over which the research will take place).

50 of these older women will receive a 1-hour class on BSE then in 8 weeks, they will be asked to completing the Older Women’s Health Questionnaire. Another 50 women will be a control group of participants and they will fill out the questionnaire first and then receive the BSE class afterwards. A total of 100 participants will be asked to fill out the Older Women’s Health Questionnaire that should take about 10-15 minutes to complete. These session times are based on a previous pilot study of this topic.

**INFORMED CONSENT PROCEDURES**

18. Describe the process you will use to recruit participants and inform them about their role in the study. Identify all of the contact points or points of interaction with potential participants. Describe what information you will give to subjects at each point of contact by attaching copies of advertisements, flyers, web site postings, recruitment letters, oral or written scripts, or other materials used for this purpose.

Contacts will be made with the Assisted Living facilities to secure their participation. The Activities Directors of these facilities will be the contact person and they will be provided a flyer to use to recruit participants for the research that will be conducted in their facility. Friendship Village of Dublin has been identified as a potential site for one of the workshop offerings. A copy of the flyer and script for the sessions is included as an attachment.

19. Describe how you will ensure that all participants understand (a) that participation is voluntary and (b) that they can withdraw at any time without penalty.

Each participant will be given the informed consent form and an explanation of the procedure. This should help them in their decision to participate or not.

20. Describe any incentives, inducements, or reimbursements (e.g. extra credit, research credit, cash payment, raffle, gift) that will be offered to the participants. Indicate whether participants will receive the incentives if they withdraw before the study has been completed.

N/A

21. Describe the procedures you will use to obtain and document informed consent and assent. Attach copies of the forms that you will use. Justify any request for a waiver of written consent. (See 45 CFR 46, sections 46.116 and 46.117, for a list of the elements of informed consent and the regulations for documenting informed consent.)

Each and every participant will receive the informed consent document prior to the class on BSE or the questionnaire being administered. A verbal explanation will accompany each administration of the informed consent.

**CONFIDENTIALITY OF THE DATA**

22. Indicate the intended use of your data. Check all that apply.
23. Describe the steps you will take to insure the confidentiality of the data. Indicate how you will safeguard data that includes identifying or potentially identifying information (e.g. coding). Indicate when identifiers will be separated or removed from the data. A master list of the participants will be kept locked with the researchers to provide confidentiality. The master list will have each participants name and their corresponding code for the research. The data that will be accessible will only have the participant’s ID code and that will not allow for identification of the actual subject. The master list of participant codes will be kept locked for security reasons.

24. Indicate where and how you will store the data and how long you plan to retain it. Describe how you will dispose of it (e.g. erasure of tapes, shredding of data).

The original data will be kept on a Zip Disk for one year and will be kept locked for security until such time as the disk will be erased. The principal investigator will retain the signed consent forms for at least three years beyond the termination of a subject’s participation in the study.

25. Describe any circumstances under which you might be required to break confidentiality. Describe how you will make potential subjects aware that confidentiality may be broken. If in your opinion there is no likelihood that you will need to break confidentiality, then your response should be “does not apply”.

N/A
APPENDIX F

ASSISTED LIVING FACILITIES CONSENT FORM
CONSENT FOR PARTICIPATION IN SOCIAL AND BEHAVIORAL RESEARCH

Protocol number: 2003B0125

Principal Investigator: Dr. R. Cory Bates

I consent to my participation in research being conducted by Dr. Bates and Kevin Evans of The Ohio State University and his/her assistants and associates.

The investigator(s) has explained the purpose of the study, the procedures that will be followed, and the amount of time it will take. I understand the possible benefits, if any, of my participation (and/or my child’s participation).

I know that I can choose not to participate without penalty to me. If I agree to participate, I can withdraw from the study at any time, and there will be no penalty.

I have had a chance to ask questions and to obtain answers to my questions. I can contact the investigators at 614-475-6511. If I have questions about my rights as a research participant, I can call the Office of Research Risks Protection at (614) 688-4792.

I have read this form or I have had it read to me. I sign it freely and voluntarily. A copy has been given to me.

Print the name of the participant:

________________________________________________________

Date: 

________________________________________________________

Signed:  ________________________________

________________________________________________________

Signed:  ________________________________ (Principal Investigator or his/her authorized representative)

Witness:  ________________________________

________________________________________________________

(When required)
APPENDIX G

HIPPA RELEASE FORM FOR THE ASSISTED LIVING FACILITIES
THE OHIO STATE UNIVERSITY

AUTHORIZATION TO USE

PERSONAL HEALTH INFORMATION IN RESEARCH

Title of the Study: Knowledge of breast self-examination and other determinants effect on the self-rated health status of elderly women.
OSU Protocol Number: 2003B0125
Principal Investigator: Dr. R. Cory Bates

Subject Name

Introduction

- The Ohio State University and its hospitals, clinics, health-care providers and researchers are required to protect the privacy of your medical and/or health-related information. If you are currently a patient, or have recently received health care services at the University, you should have received a Notice of Privacy Practices. If not, a copy will be given to you. Please carefully review this information.

- If you agree to participate in the research entitled, Knowledge of breast self-examination and other determinants effect on the self-rated health status of elderly women, described in the study consent form that you have also received, your medical and/or health information will be used and shared with others involved in this research. In addition, the researchers involved in the study may generate new personal research-related health care information about you as a result of your participation in the study.

- Personal health information that will be used or shared with others involved in the research, both during the research and afterwards, may include your research record and any health care records (for example, your medical records, x-ray and/or laboratory results at the Ohio State University Hospitals). Any psychotherapy notes in your health records will not, however, be shared or used. Such notes require a separate, signed authorization.

- Before researchers use or share any health or medical information relating to your participation in the research study, The Ohio State University is required to obtain your specific authorization. This form provides that authorization and helps assure that you are properly informed of how this information will be used or shared with others involved in the research. Please read the information below carefully before signing this form. If you have any questions about this authorization, the University’s Notice of Privacy Practices or the research project, please ask before signing this form.
Uses and Disclosures Covered by this Authorization

Researchers and staff at The Ohio State University will share, use and receive your personal health/medical information for this research study. In addition, other Ohio State University staff not involved in the research but who may become involved in your care (if necessary for research-related treatment) will have access to your personal information. Also, members and staff of the Ohio State University’s Institutional Review Boards (including the Western Institutional Review Board), the Office for Responsible Research Practices and University data safety monitoring committees, which oversee the research study, will have access to your personal information. In addition, your health/medical information may also be shared with federal and state agencies, for example, the Food and Drug Administration, Office for Human Research Protections, National Institutes of Health and Ohio Department of Human Services, that have authority over the research or to whom access is required under the law. Finally, staff of the Ohio State University Research Foundation that provide administrative support for the study may also have access to your personal health/medical information during and following the study.

The following researchers, companies and/or organization(s) outside of The Ohio State University may also share, use, and receive your personal health/medical information in connection with the research study: NONE

Duration of Authorization

This authorization will not expire unless you change your mind and revoke it, as described below. There is no scheduled date at which your personal information will be destroyed or no longer used. This is because the information used and created during the research may be analyzed for many years, and it is not possible to determine when this will be complete.
Signing the Authorization

- You have the right to refuse to sign this authorization. Your health care outside of the research study, payment for your health care, and your health care benefits will not be affected if you do not sign this form, but you will not be able to enroll in the research study described in this authorization and will not receive any research treatments if you do not sign this form.

- If you sign this authorization, you may change your mind at any time, but researchers may continue to use information collected up until the time that you formally changed your mind. If you change your mind, your authorization must be revoked in writing. To revoke this authorization, please write to Dr. R. Cory Bates at 287 Arps Hall, Columbus, Ohio 43210 or Kevin Evans at 278 Amfield Court, Gahanna, Ohio 43230.

- Signing this authorization also means that you will not be able to see or copy your research-related information or the portion of your medical records that describes research treatment until the research study is completed.

Contacts for Questions

- If you have any questions relating to your rights or the research, please contact at 287 Arps Hall, Columbus, Ohio 43210. (614)-292-8351or Kevin Evans at 278 Amfield Court, Gahanna, Ohio 43230. (614)-475-6511

Signatures

I have read (or someone has read to me) this form and have had the opportunity to ask questions. All of my questions about this form have been answered to my satisfaction. By signing below, I authorize Dr. R. Cory Bates and the others listed on this form to use, disclose and/or create the personal health and/or medical information described to all parties who may need it for research purposes. I will be given a copy of this signed document.

Signature

(Subject or Legally Authorized Representative)

Name

(Print name above)

(If legal representative, also print relationship to participant.)

Date Time AM / PM
APPENDIX H

BSE WORKSHOP SCRIPT FOR THE EDUCATIONAL INTERVENTION
BREAST SELF EXAMINATION WORKSHOP:

Instructor: Kathy A. Evans, BSN, RN & graduate student assistant

I. Introductions and purpose of workshop

Ms. Evans will welcome each participant to the workshop and introduce herself and the graduate student assistant. “Hello, my name is Kathy Evans and I am a registered nurse and work in women’s health. This is my assistant, Kevin and he will be helping me with handling out your educational materials.” A consent form will be passed to each participant.

Ms. Evans will describe the workshop as part of a research project being conducted with Ohio State University. “This workshop is designed to help you learn more about breast self-examination. We also will be gathering some information from you about your risk for breast disease.”

Ms. Evans thanks each participant for coming and expresses gratitude for each person’s participation. “Before we get started, we need to explain that your participation in voluntary and that we really appreciate each of you coming for this workshop. It is also important to have you understand that your participation is totally up to you and you can withdraw from the workshop and follow up survey at any time. A consent form is being distributed for you to read and sign prior to beginning this workshop.”

Ms. Evans assures each participant that all the information that is given will be held in the strictest of confidence. “All the information that you give us will be totally confidential and will not be used by anyone other than the research team.”

Ms. Evans will make the statement, “The biggest concern for this project is to provide each participant with a technique that will promote your continued good health.”

II. Gail Model evaluation for risk of breast disease

Ms. Evans introduces the first activity and that is a calculation of each person’s risk for disease. A data sheet is provided so that participants can list their individual risk factors. As the participants fill out the data sheet, Ms. Evans and graduate student will circulate among the participants to help with the collection of the data. After each form is filled out, Ms. Evans and the graduate student will use calculators and take the individual information and predict each person’s risk for breast disease.

III. Video on BSE

The next activity is for the workshop participant to watch a video titled, Breast Self-Examination by Searle. The tape runs for 8 minutes and goes over each and
every step of the BSE technique. At the conclusion of the videotape, Ms. Evans
circulates around the room to check for understanding of the content and also to
answer any questions that may have come up during the tape.

**IV. Instruction on BSE - Kathy Evans**

At this point, Ms. Evans will demonstrate the BSE technique by using a female
mannequin. The use of the mannequin allows Ms. Evans to go over the searching
technique and allow for questions or concerns about the BSE technique.

**V. Everyone work on their hand held model**

After the instruction has concluded, each participant will be given a hand held
breast model to practice the technique. The mini breast-teaching model will be
given to each participant to keep for participating in the workshop. Inside each
mini breast teaching model is a pea size mass. Each participant will be encouraged
to find their pea size mass by searching their model and locating it using the BSE
technique. Ms. Evans will again circulate around the room to insure that each
participant finds the mass.

**VI. Questions or concerns**

At the conclusion of the practice session, some helpful reminders will be given to
each participant to remind them about using the BSE technique each month. The
most important point that will be stressed is that it is important to practice BSE
each month and also to complete the technique the same time each month. A
reminder calendar will be given to each participant and also a strip of stickers to
place on the calendar as a reminder that BSE has been completed.

**VII. Discussion of completing the health survey**

At the conclusion of the session, each participant will be told about receiving a
health survey.

The health surveys will be mailed to each participant and should arrive in about 8
weeks. It will be stressed that it is important to fill out the survey completely.
After completing the survey, it will be important to send it back in the stamped
envelope that is enclosed.

Ms. Evans will say, “In about 8 weeks, a survey will be coming to you to find
out how you are doing with your health and the practice of BSE. Please be sure to
fill out the survey completely and mail it back to the address printed on the stamped
envelope. If you have any questions or concerns about the survey please call the
phone number included on the survey for assistance.”

Ms. Evans will again assure each participant that all information on the surveys
will be held in the strictest of confidence and will only be used to report a trend for
the health of older women as a group.
APPENDIX I

THE GAIL MODEL RISK ASSESSMENT TOOL
**Gail Model Risk Assessment Tool**

Please place the best answer in the space provided:

1. Please indicate which race category best describes you:
   
   A. Caucasian/Non Black   B. Black

2. Please list your age:

   ______________________

3. Please list your age at the time of your first menstrual period:
   (If less than 10 years old, list 10)

   ______________________

4. Please list your age at first live birth
   (Use 0 for having never given birth and if your age was less than 13, list 13)

   ______________________

5. Please list the number of mother, sister(s), and daughter(s) who have had breast cancer.

   ______________________

6. Please list the number of previous breast biopsies:

   ______________________

7. If you answered question 6 with a number then please indicate for those biopsies was the report from the lab ATYPICAL HYPERPLASIA

   A. Yes   B. No   C. Unknown