This is to certify that the

thesis entitled

DEVELOPING MESSAGES TO INCREASE THE PERFORMANCE OF BREAST SELF-EXAMINATION UNIVERSITY WOMEN

presented by

Pamela L. Gallina

has been accepted towards fulfillment
of the requirements for

Master of Arts degree in Communication

Major professor

Date 7/31/97

O-7639 *MSU is an Affirmative Action/Equal Opportunity Institution*

DEVELOPING MESSAGES TO INCREASE THE PERFORMANCE OF BREAST SELF-EXAMINATION IN UNIVERSITY WOMEN

By

Pamela L. Gallina

A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

MASTER OF ARTS

Department of Communication

1997

ABSTRACT

Developing Messages to Increase the Performance of Breast Self - Examination in University Women

By

Pamela L. Gallina

This thesis was conducted in two parts. The first examined variables derived from three social science theories to determine their relationship to the practice of Breast Self Examination (BSE). The second was directed toward utilizing the variables with the most significant relationships to BSE in the creation of health promotion campaign materials to encourage women to attend BSE workshops.

The sample was comprised of 270 undergraduate women students at a large state university in the Midwest. A Likert-scaled questionnaire was used to measure attitudes, subjective norms, knowledge, self efficacy, response efficacy, seriousness, susceptibility, perceived benefits, perceived barriers and health motivation and to assess their influence on intention to practice BSE and actual practice of BSE. Media and demographic variables were also collected. Correlational methods were employed for statistical analysis. The results demonstrated that the variables attitude and subjective norm were most highly associated with the intention to practice BSE; and that the intention to practice BSE was associated with the actual practice of BSE. These results were interpreted as providing the most support to the Theory of Reasoned Action. Self efficacy and response efficacy were also associated with the practice of BSE, which was interpreted as providing support to Social Learning Theory. Seriousness, susceptibility, knowledge, perceived benefits, perceived barriers, and health motivation when combined were found to be associated with the practice of BSE lending support to the Health Belief Model. Recommendations for incorporating the findings into written and oral messages were provided.

ACKNOWLEDGMENTS

I would like to thank my husband Bob for his patience and support during this process. In addition, I am grateful for the assistance and supervision provided by the members of my committee, Kim Witte, Charles Atkin and Bella Mody. The help of Nancy Allen of the Olin Health Center and Lynn Forsbloom from the Physical Education Department at Michigan State University was also invaluable.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER ONE

OVERVIEW OF THE STUDY

Introduction

The incidence of breast cancer has continued to climb over the past fifty years, making it a major cause of illness and death among American women today. Breast self examination (BSE) is recommended by the American Cancer Society for women over the age of twenty as an important monthly practice for discovering breast cancer in the early stages when it is most successfully treated. Current research by the National Cancer Institute however, indicates only four in ten women actually practice breast self exam on a regular basis (ACS, 1994).

This study first utilized three existing theories, The Theory of Reasoned Action (TRA), the Health Belief Model (HBM) and Social Learning Theory (SLT), as the bases for research on the prediction of performance of Breast Self Examination. The effort then conducted formative evaluation research utilizing of audience lifestyle profiles, needs assessments, and pretests to develop messages which encouraged women to attend BSE workshops.

This project was coordinated with a campaign known as "Women Empowering Women" sponsored by the health clinic of a large midwestern university. The campaign was an effort to facilitate BSE clinics designed to teach campus women breast self exam. These clinics were held on campus in cooperation with The American Cancer Society.

In this study, the major focus was on the development and analysis of formative evaluation research to create a successful BSE information campaign. Atkin and Freimuth (1989) and Mody (1991) have previously discussed this approach in the creation of successful health-related campaigns:

> Over the past two decades, the mass media have presented an increasing array of health campaigns intended to combat heart disease, cancer, smoking, drug and alcohol abuse, and unsafe driving. Researchers have concluded that these education and persuasion campaigns achieved only limited success, and have identified a key reason: most are under-developed at the preparation, production, and dissemination phases of implementation due to poor conceptualization and inadequate formative evaluation research inputs (Atkin and Freimuth, 1989, p. 131-150).

The study was initiated by conducting interviews with local experts regarding the study population and breast cancer research. The director and the assistant director of clinical affairs at the health center located on campus were selected as primary informants. These individuals were selected not only because of their combined experience in the field of health care and health-related issues, but also for their extensive one-on-one experiences with campus women. According to Mody (1991), it is important for data gathered from study subjects to be combined with information from other sources for validation.

Plan of the Study

It was determined from interviews with the director and assistant director of clinical affairs at the campus health center that there is a felt need for college age women to learn the correct way to perform breast self examination. One assumption of the project was that if the correct procedures for performing BSE are learned early and implemented into an overall self health plan, then at age 20, when the American Cancer Society recommends women begin practicing BSE, the knowledge and behavior will be established.

Based on previous studies (Champion, 1987; The Opinion Research Corporation, 1980; Trotta, 1980) it is clear that BSE is more likely to be performed when a woman has received correct training in the procedure from a health care professional. For this project, medical students were who were facilitating breast self examination workshops on campus were included as a professional resource for such training. These medical students were well aware of the need for this project because attendance at their workshops had been poor in the previous semesters. With their support, this project was devised to develop a campaign to improve attendance. Another assumption of the effort was that if such an information campaign achieved good results at this particular university, such a campaign could be used to boost attendance at comparable BSE workshops for college women nationwide.

The next step of this study was to facilitate a brainstorming session with four graduate students to develop preliminary messages for later testing and critique in the focus groups by the target audience. Items were then developed from existing instruments that were created specifically for measurement of the Health Belief Model variables, Theory of Reasoned Action variables and the variables associated with Social Learning Theory. The purpose of this activity was to develop an instrument and a focus group protocol that could accurately predict attendance at BSE workshops, women's knowledge of breast cancer, their media habits, their health habits, as well as prevailing attitudes of college-age women with regard to BSE. The items were judged for inter rater reliability by the three members of the committee that were selected to oversee this study. The University Committee on Research Involving Human Subjects (UCRIHS) approved the instrument, the focus group protocol, and the research consent form. The head of the physical education department was then contacted to gain permission to employ the instrument in her physical education classes. Her approval was granted and subsequent employment of the instrument took place in August, 1995. The participants in the study were asked to

voluntarily sign up for subsequent focus group sessions. Three focus group sessions were then held in the Olin Health Center. Notes were taken during these sessions by the researcher. The women who participated in the focus groups gave their critique and suggestions about the messages and the messages were revised based on this input at three separate sessions. Data gathered was analyzed by SPSS. Factor analysis and multiple regression statistics were employed.

Significance of the Study

Previous studies have focused primarily on the practice of BSE by women over the age of 35. This study is unique in that its primary focus is on women ages 18 to 21.

Studies show that BSE is not widely practiced by women of any age. This is reported be a two-fold problem. One aspect is that women lack knowledge of the appropriate technique for BSE performance; the other is that BSE has not become a socially acceptable practice.

This study sought to demonstrate that women's participation in campus BSE workshops can be increased at a time when they are developing knowledge bases and health practices for their adult lives. It is theorized that if women attend workshops on campus when they are 18 to 21 years old, their socialization process will have begun, increasing the likelihood they will view the procedure of BSE as an important health habit and practice it throughout adulthood.

Previous studies of this topic have primarily focused on the implications of BSE applicable to nursing and medical practice. This study took a multidisciplinary approach to the problem of BSE practice and moved a step further to develop campaign messages to promote such behavior.

Purpose of the Study

The purpose of this study was to develop an instrument and facilitate focus group sessions that will illicit information necessary to develop messages that will encourage university women 18 to 21 years old to attend breast self examination workshops. It was also anticipated that the work would improve in the prediction of performance of BSE.

Statement of the Problem

Extensive research has been done utilizing the Health Belief Model (HBM), Theory of Reasoned Action (TRA) and Social Learning Theory (SLT). Utilization of all three in the same research has been limited, however. Utilization of all three theories in studying BSE were particularly limited: there were only two studies found. The use of the three theories in general, either applied individually or in concert, has been, moreover, limited to the study of women 35 years old and older. No actual communications campaign using these three theories and applying formative evaluation research techniques to develop messages to increase attendance at health clinics to learn correct procedures for BSE are found in the literature.

Statement of the Research Question

This was designed to answer the questions: "Which 18 to 21 year old college women practice BSE?"; "Why do these young women practice BSE?"; "Why do other 18 to 21 year old college women fail to practice BSE ?"; and "What media messages will encourage greater participation of college women in BSE training workshops?"

Using this information, the project designed messages to encourage non-BSE performing women to attend BSE workshops on a university campus.

This study also sought to predict intention to perform BSE from young women's survey responses.

Hypotheses of the Study

1. Attitude and subjective norm are positively related to a college woman's practice of BSE.

2. Knowledge of breast cancer and BSE are positively related to a college woman's practice of BSE.

3. Self efficacy and response efficacy are positively related to a college woman's practice of BSE.

4. Seriousness, susceptibility, benefits and motivation together are positively related to a college woman's practice of BSE.

5. The intention to practice BSE is positively related to a college woman's actual practice of BSE.

6. There is a negative relationship between the strength of health belief related to barriers and a college woman's actual practice of BSE.

Definition of Terms

The following operational definitions were used in the present study:

SERIOUSNESS - how threatened a woman feels by breast cancer.

SUSCEPTIBILITY - a woman's perception of the risk she has of developing breast cancer.

BARRIERS - a woman's perceptions of the negative aspects of performing BSE.

BENEFITS - a woman's perception of how effective BSE will be in early detection of breast cancer.

MOTIVATION - state of concern about breast cancer that results in a positive, healthy behavior (e.g., BSE).

KNOWLEDGE - factual material possessed by a woman about breast cancer risk factors and her ability to impact these factors.

INTENTION - an expressed state of willingness to perform BSE.

ATTITUDE - a woman's perceptions of how BSE and breast cancer affect her.

SUBJECTIVE NORM - the perception of how significant others in a woman's life view BSE and breast cancer.

SELF EFFICACY - a woman's confidence in her own ability to perform BSE.

RESPONSE EFFICACY - a woman's subjective perception of how effective performing BSE will be in detecting breast cancer and/or averting death.

PRACTICE - actual performance of BSE.

RISK FACTOR - a behavior or genetic history that predisposes a woman to develop breast cancer.

EMPOWERMENT - the perception a woman has of being in control of her own medical care.

BREAST SELF-EXAMINATION (BSE) - the manual examination and mirror observation of both breasts for the specific purpose of detecting potential abnormalities.

Limitations and Assumptions of the Study

One limitation of this study is that it relied on self-report information which has high demand characteristics. Such characteristics heighten the probability that women participants reported what they believed they should have doing, and not necessarily what they were doing in terms of BSE.

A second limitation is the absence of follow-up to the study. It is important to know how many women practice six months or a year after participation in a BSE clinic who had not practiced it previously.

In terms of assumptions, it was assumed that performing breast self examination is an important health practice resulting in the early detection of breast cancer. It was also assumed that women who are taught the correct procedure BSE by a health professional have a greater likelihood of continuing to practice it. It was also assumed that the more common the practice of BSE becomes and the greater the awareness of BSE, the more likely it is that women will engage in the practice. It was also assumed that when individuals are instructed in good health habits at an early age, they are more likely to continue those habits throughout their lives.

CHAPTER TWO

CONCEPTUAL FRAMEWORK AND REVIEW OF THE LITERATURE

Conceptual Framework

This study approached the examination of university women's intention to practice and their actual practice of BSE from three conceptual perspectives, the Theory of Reasoned Action, the Social Cognitive Theory (also known as the Social Learning Theory), and the Health Belief Model. Each of these are described briefly to provide a conceptual framework for this research.

The Theory of Reasoned Action

Ajzen and Fishbein's (1977) Theory of Reasoned Action (TRA) proposes that beliefs, when combined with evaluations of the likelihood that a certain behavior will result with particular consequences, determine behavior. This conceptual model appeared to have application to predicting the likelihood that study participants would perform BSE.

TRA furthermore posits the influence of subjective norms (Ajzen,1985) and attitudes which are based on ones perception of the behavioral beliefs of particular referent groups or persons toward a specified behavior. TRA suggests that subjective norms result in conscious deliberations of individuals which subsequently influence their behaviors. Such norms are comprised of normative beliefs, along with a motivation to comply with or conform to certain referent groups.

Ajzen and Fishbein (1980) provided support for the notion that attitudes and subjective norms can influence behavioral intentions, and that intentions can influence behavior. Lierman (1990), for example, utilized TRA to explore breast self examination

and reported evidence of a strong attitudinal component which contributed significantly to a woman's intention to perform BSE, noting that both the attitudinal and normative components significantly contributed to the prediction of BSE performance. The social normative factors had previously been demonstrated to be related to BSE performance by Calnan and Rutter (1986).

The Health Belief Model

The Health Belief Model as synthesized and developed by Becker (1974) proposes that individuals' attitudes about a health condition and their potential behavior predicts subsequent behavior. Janz and Becker (1984) demonstrated the HBM is a viable model for the study of a wide variety of health conditions, including breast cancer. Subsequent application of the HBM by Champion (1987), Stillman (1977), and Hallal (1982) demonstrated a relationship between the frequency of BSE and HBM variables. These variables have been generally described as: perceived susceptibility, perceived seriousness, perceived benefits, perceived barriers, health motivation, control, and knowledge of the condition.

Champion (1987) utilized multiple regression and discriminant analysis to demonstrate that barriers, knowledge, and susceptibility were correlated with the frequency of BSE in a convenience sample of 588 women ages 12-74. The instrument used in Champion's study employed individual items to measure frequency of BSE in relation to the method by which BSE was taught. The study found that perceived barriers and knowledge about breast cancer, benefits, and barriers were associated with the frequency of BSE. It also found that women demonstrated greater frequency of BSE when instructed by a doctor or a nurse than when taught in other ways. The study noted

that assessment and identification of barriers provides primary care givers with information to work through barriers with the patient.

Champion (1984) reported development of an instrument to assess HBM constructs for the specific purpose of measuring the likelihood that a woman would perform BSE. The present study incorporated items from this instrument. Stillman (1977) also developed a similar instrument, and other items used in the present research were derived from Stillman's measure.

Social Learning Theory

Bandura's (1982) Theory of Social Learning (TSL) provides a theoretical rationale basis for adding self-efficacy to this study. TSL, now more commonly called Social Cognitive Theory, focuses on perceived self-efficacy in behaviors, including those concerning health. Perceived self-efficacy in this context is defined as individuals' confidence in their ability to perform a specific behavior. Efficacy expectations refer to individuals' confidence in their own ability to perform a given behavior (Bandura, 1977). TSL also outlines the importance of outcome expectations or response efficacy, which, in essence, is the belief that a particular behavior will produce a specific outcome (e.g., "If I perform breast self-examination, I can improve my chances of identifying breast cancer while it is treatable"). According to TSL tenets, efficacy expectations must be high for a person to perform an action that will avert a particular health threat.

Review of the Literature

Introduction. Health communication research utilizing the Health Belief Model is extensive. The use of the model in studies with college age women, however, is limited. The combined use of all three social science research theories (HBM, TSL, and TRA) in a single study is also limited, although a large body of work exists supporting each specific theoretical approach.

A large number of health communication campaign studies were found utilizing formative evaluation methodology. The literature review developed for this study includes studies where the HBM was applied to review preventative health behaviors as well as early disease detection. The review also includes: (a) previous research that examined self-efficacy as a component in health communication related studies; (b) previous research examining attitudes and subjective normative beliefs toward health related behaviors; (c) previous research implementing the knowledge variable in health belief related studies; and (d) formative evaluation research studies relating to health communication campaigns.

Studies Incorporating The Health Belief Model. Stillman (1977) investigated the nature of women's health beliefs about breast cancer and breast self examination. This study did not conclude that health beliefs cause behavior, however, it did report that a majority of women who did practice BSE were unsure of their abilities to detect abnormalities. This study developed items that were designed to elicit factual knowledge and to reflect perceived susceptibility to breast cancer and BSE benefits. It provided the basis for adding a knowledge variable to the HBM.

Turnbull's (1978) work assessed other factors presumed to affect BSE. The study sampled 160 graduate nurses to examine the relationship between six preventative health

measures and the practice of BSE. It was found that changes occurred in women's health practice of BSE following the 1974 mass media coverage of Betty Ford's mastectomy, with increases in the numbers practicing. The findings also suggested a relationship between the practice of BSE and positive practice of other health measures in women up to the age of 35, but not older.

The relationship between educational level and BSE practice was also of interest early in the 1980s. In both Feldman et al. (1981) and Huguliey and Brown (1981), it was reported that younger women who had a higher level of education demonstrated a greater frequency of BSE practice

Hallal (1982) analyzed differences between health beliefs, health locus of control and self concept in adult women who practice BSE compared to those who do not. Practicing BSE was correlated with higher levels of health beliefs and higher self concept levels.

Hallal (1983) also studied relationships between knowledge of BSE and women's demographic characteristics. The results demonstrated that non-practicers had less accurate knowledge about breast cancer than regular or intermittent practicers. Characteristics associated with non-practicers of BSE included low income and less education. Regular practicers had more confidence in their ability to perform BSE correctly and find any abnormalities. Some 37% of the women 18-25 were non-practicers, but the number of non-practicers rose to 47% among women 65 and older. These two groups accounted for the highest number of non-practicers.

Calnan and Moss's (1984) study attempted to predict (a) attendance at a class in BSE and (b) compliance with education given in the class. Dimensions of the HBM were found to be the best predictors of attendance, however a large variance was unexplained in both analyses suggesting the HBM has limited value in correlating compliance and

class attendance. A limitation of this study was the absence of follow up of actual practice after attending the workshop.

Janz and Becker (1984) reviewed HBM-related investigations published between 1974 and 1984. A summary was provided for 46 HBM studies showing that 24 examined preventative health behavior and three addressed health clinic utilization. Perceived barriers was consistently reported to be the most powerful HBM construct while perceived susceptibility was the strongest contributor to perceived health behaviors (PHB). The reverse was true for perceived benefits. Perceived severity had the lowest overall significance but was strongly related to sick role behavior (SRB).

The authors noted that the HBM model is predicated on the premise that "health" is of great concern and also that "cues to action" are in force suggesting that where these conditions do not exist, the model is not likely to be useful or relevant in explaining behavior. This review recommended that health education programs attend to the attitude and belief components in addition to other likely influences on health related behavior. This work also underscores that the behavior model developed by Ajzen and Fishbein includes the importance of considering "the person's beliefs that specific individuals or groups think he should or should not perform the behavior." This normative or social approval variable is similar to the benefits or barriers constructs of the HBM. Performing a socially approved behavior, such as eating low fat foods or exercising, may be seen as a benefit whereas personal touching to perform BSE may be seen as a barrier. The authors propose that women who want to integrate BSE into their health regimens may be inhibited by fear or experience the social disapproval of peers or family who may look with disapproval on the practice of touching oneself in such an intimate way.

Champion (1984a) examined the relationship of attitudes about BSE and breast cancer to the frequency of BSE. Data was gathered from a convenience sample of 301 women by means of a self-administered questionnaire. Results supported the HBM

model's ability to predict the frequency of BSE. The HBM barriers were most significant, with similarity to findings of Trotta (1980).

Champion (1984a) further reported the second most significant item was health motivation, reporting that the most concerned participants were most likely to perform BSE. The study's recommendation for future research included identifying barriers, and subsequently developing appropriate interventions, as well as collecting data on attitudes toward good health.

The study concluded that in unconcerned patients, teaching is the most appropriate measure. Questioning persons about general health practices was also suggested as a method with utility for identifying the likelihood of BSE practice.

Champion's (1984b) effort described the development of valid and reliable scales with which to explore the relationship between HBM constructs and BSE. Construct validity of the scales was established via factor analysis and multiple regression while Cronbach's alpha and Pearsonian r were used to compute reliability. The scales judged both valid and reliable were: susceptibility, seriousness, benefits, barriers, and health motivation.

Calnan and Rutter (1986) explored the relationships between health beliefs and behavior, with a pre-test/post-test design. Women were studied prior to attending a BSE workshop and one year later. The campaign produced noticeable changes in behaviors and beliefs; however, the results were much weaker than expected, with workshop participation accounting for only 25% of the variance. The researchers interpreted results to show that even a single class on BSE can be a valuable resource for improving technique and that health education may be effective in encouraging women to practice BSE if it focused on changing beliefs about the value of the behavior rather than susceptibility to breast cancer. Calnan and Rutter concluded that susceptibility was an important factor influencing women's attendance at classes BSE classes.

The study also noted that the beliefs associated with BSE practice and the beliefs associated with attending BSE classes are the same. It further suggested that the initial stage of any health campaign must be to discover the salient beliefs of a target audience.

Massey (1986) examined the relationship of health beliefs, perceived susceptibility to breast cancer and the practice of BSE. The study sought to better understand the underlying motivations that stimulate a healthy person to repeatedly perform BSE. Results were targeted for use in campaigns to promote BSE practice. The findings showed that women who reported more frequent BSE practice perceived themselves to be more susceptible to breast cancer than others. In addition, age, education and race were significantly related to perceived susceptibility. The study recommended additional research relating to the effect of previous encounters with breast cancer, teaching methods, and educational programs. Younger women were found to have a higher perceived susceptibility to breast cancer. It was recommended that future effort be concentrated on high school graduates and college-age women.

Champion (1987) explored the relationship between the HBM variables and frequency of BSE. The instrument used included items that measured the frequency of BSE and the method by which BSE was taught. Multiple regression and discriminant analysis demonstrated barriers, knowledge, and susceptibility were related to frequency. The study concluded that women were more likely to practice breast self exam when trained by a health professional. This study added evidential basis for including the knowledge as a variable in HBM studies.

Rosenstock, Strecher, Becker (1988) incorporated the Social Learning Theory self efficacy components and locus of control with the HBM in an attempt to explain how these explanatory factors may be related thus presenting a revised explanatory model. This model predicted increased accountability for health related behavior and provided the theoretical justification for the addition of self efficacy to HBM. This effort asserted

that the lower than expected explanation of variance in health behaviors previously found in HBM research would increase with the addition of self efficacy to the model.

Champion (1988) conducted a correlational study designed to identify attitudinal variables specified by the HBM related to intent, frequency, and proficiency of BSE. A probability sample of 380 women age 35 and over was selected by means of random digit dialing. Data was collected during home interview. Results were supportive of the ability of susceptibility, seriousness, barriers, health motivation, and control in combination to predict a woman's intent to practice BSE. Furthermore, frequency and total proficiency for BSE were predicted by health motivation, susceptibility, and barriers. Results supported the HBM variables in predicting women's intention and actual behavior of BSE.

To summarize, the results of the research utilizing the HBM has been varied. A consistent problem with HBM studies has been the self-report methodology employed.

The addition of a knowledge variable has also been recognized as introducing certain problems. Although the underlying assumption here is if a person has adequate knowledge the desired behavior with subsequently follow, this simplistic cause-effect relationship cannot always be demonstrated. HBM research has also shown that intervention programs which modify skills and/or knowledge do not necessarily result in the expected or anticipated behavior behavioral changes. Even so, the HBM is considered to be a more powerful tool with the addition of the knowledge variable.

Studies Incorporating the Theory of Reasoned Action. Ajzen and Fishbein's (1973) study explored the original TRA propositions. Once again, specific behaviors were described as predictable based on behavioral intentions. Those intentions were shown to be comprised of two factors: the attitude toward the action and the perceived normative expectations of certain referent groups. Other variables were shown to affect actual

behavior and intention only indirectly by influencing one or more components of these components.

Fishbein and Ajzen's (1975) work examined the TRA assumption that humans are rational beings who make systematic use of the information available to them and that people consider the implications of their actions prior to performing a given behavior. The authors reported that reasoned action contrasted to automatic behavior. Ultimately the TRA was defined as a tool for prediction and understanding of behavior. This work suggested intention as a major determinant of human action. It found that people generally do what they intend to do.

Ajzen and Fishbein's (1980) study took TRA one step further to demonstrate how the theory and its methodology can be used to predict, explain, and influence human behavior. This research demonstrated a link between beliefs and behavior. On the basis of individual experience a person was said to form a unique belief regarding the consequences of performing a behavior and unique normative beliefs. These beliefs then become what is described as attitude and subjective norms and consequently determine intention as well as behavior. It was suggested that behaviors can be determined with a careful examination of an individual's beliefs; moreover, it was proposed that if beliefs are changed, behaviors can be influenced.

Champion (1988) examined the relationship of knowledge, teaching method, confidence and social influence to intent, frequency and proficiency of BSE. A probability study of 380 women, 35 years of age and older were selected for in-home studies. Knowledge was found to be significantly related to intent and proficiency, but not frequency. Confidence was significantly related to all three variables. Social influence was related to intent. Being taught individually with a return demonstration increased proficiency and frequency.

Lierman, Young, Kasprzyk and Benoliel's (1990) effort used a convenience sample consisting of 93 volunteers ranging in age from 52 to 90. This study examined the use of TRA constructs to predict BSE. Direct and indirect measures of attitude and social norm were used to predict intention to perform BSE and BSE frequency. Both reported to explain a significant amount of the variance in intention and BSE frequency.

Discriminant analysis was used. Only the attitudinal component significantly contributed to prediction of intention. Recommendations included the use of a six month follow-up to assess actual performance.

In summary the TRA literature provides the evidence for the inclusion of the attitude and subjective normative beliefs to a study relating to health beliefs and practices.

Studies Incorporating Social Learning Theory. Bandura's (1977) work presented a framework to explain changes in behavior that occurred as a result of treatment interventions. The work discusses how expectations of personal efficacy determined whether coping behavior were initiated, how much energy were invested in specific behaviors and the duration of a behavior based on obstacles present.

A study by Greenwald et. al. (1978) included 193 of 414 women diagnosed with primary breast cancer at seven hospitals participating in the North Eastern Region Breast Cancer Program. Clinical data was collected from the primary physician. In this study 28% of the women were classified as practicing BSE; 70% of tumors were found by the women themselves by accident; 21% of tumors were found through BSE; and 10%, by physician's examination. The effort concluded that breast cancer mortality might be reduced 18.8% by means of using BSE.

Bandura's (1982) study on self efficacy reported that in causal tests, the higher the level of induced self-efficacy or confidence the higher the performance and the lower the emotional arousal of subjects. The work addressed the ways in which self-perception of efficacy influence thought patterns, actions and emotional arousal. This research

attempted to predict and explain behaviors using the concepts of incentive, outcome expectation, and self-efficacy expectation.

In a similar vein, Bandura's (1983) paper addressed the issue of individuals refraining from performance of a task (or behavior) they found threatening "due to expected negative consequences, including the expectation that they will experience fear"(p. 464).

Alagna, Morokoff, Bevitt and Reddy's (1987) study focused on the frequency of BSE by comparing women at high risk for breast cancer to women at lower risk. Findings showed even though the women in the high risk group had more knowledge about BSE, were more focused on breast cancer and had less confidence in the proficiency of their physician in conducting a breast examination, the rate of monthly BSE practice was no higher for them than for the low risk group. Self confidence (self-efficacy) in performing BSE was reported in this study to be significantly related to BSE frequency in both groups. No other variables were significant in predicting frequency in the high risk category. The study reported that high risk women were more fearful of performing BSE than low risk women. This was interpreted as ruling out the likelihood that high risk women avoid BSE because of the belief that their physicians are giving them quality examinations. The avoidance was explained by the fear of finding a breast lump resulting in grave prognostic implications. The work recommended that physicians emphasize the importance of BSE and teach their patients proper technique. Encouragement plus instruction was considered to be most likely to result in increased self confidence in BSE which has been identified in multiple studies as an important determinant of proficiency and frequency of the practice.

Strecher, McEvoy, DeVeilis, Becker, and Rosenstock's (1986) effort sought to provide a more detailed analysis of both the concept of self-efficacy and its significance for health educators, research and practice. The focus of this review piece was on cigarette smoking, weight control, contraception, alcohol abuse, and exercise behavior. The findings of the reviewed studies significantly linked self-efficacy to health behavior change and maintenance. The article discussed efficacy enhancement in relation to subsequent health behavior change as well as to methods for modifying health practices. Recommendations included the need for integration of self-efficacy in behavior change programs.

A recent study by Grady (1992) focused on BSE in women over 65. This review analyzed literature related to the efficacy and to the definition and measurement of BSE. The study reported:

> Support for BSE is based on three major assumptions: (a) that we can define it and know the appropriate technique for it's performance; (b) that it is acceptable to women and can gain widespread utilization; and (c) that its correct application by women will lead to early detection of breast cancer. Opposition to BSE is based on rejection of these assumptions along with concerns that BSE could have at least two harmful effects: it could lead to many false positives, which would subject women to needless worry and suffering and place an undue burden on physicians and other medical resources, or, conversely it could lead to many false negatives, which would wrongly reassure women and inhibit them from seeking needed medical care(p.69).

The work emphasized the seriousness of teaching techniques and the need to improve existing instructional methods for imparting BSE information. Subsequent studies related similar findings, including those of Foster and Costanza (1984), Philip et al. (1986), Mant et al. (1986) and Ogawa et al. (1987). In summary the SLT studies reviewed offer adequate evidence for the concept of self-efficacy to be added to a diverse range of health behavior research including BSE.

Research Utilizing Combined Theoretical Perspectives. Recently, Champion (1991) explored at the relationship between selected variables from the theories of HBM, TRA and SLT and the practice of BSE. A probability sample of 322 women ages 35 and older was selected by means of random digit dialing. Data was collected through mailed questionnaires.

Results supported a relationship between BSE and the attitudinal variables of health motivation, social influence, susceptibility, barriers, confidence, and knowledge. In addition, knowledge, social influence, and health motivation was found to be related to compliance with mammography and professional breast examination (PBE).

A subsequent study by Champion (1992) used a probability sample of 362 women age 35 and older, with data collected two times, one year apart, using personal interviews in time one and a telephone interview in time two. BSE at time one was found to be directly related to BSE at time two. Susceptibility, health motivation, and barriers were identified significant predictors of BSE. Findings were noted to have implications for interventions to increase BSE in women 35 and older.

Summary

To summarize, the results of the research utilizing the HBM, TRA, and SLT with preventative health behaviors has provided diverse findings. A consistent problem with research has been the lack of theoretically based formative evaluation. This study utilizes these three theories as the foundation for theoretically based messages to be developed.

The results of research utilizing the HBM with disease detection and preventative behaviors have been varied, but suggest certain HBM variables to valuable tools in predicting a specified behavior.

With regard to the SLT studies reviewed, findings offer adequate evidence for the concept to be added to a diverse range of health behavior research including the addition of the self - efficacy concept in BSE research. In summarizing the TRA literature review of the attitude and subjective normative beliefs, it presently seems that these have the potential to be significant variables in studies relating to health beliefs and practices.

Although there were only two studies noted in the literature review for formative evaluation research, the quality and number of studies cited in these two reviews support the conclusion that this type of research is the most useful and accurate when creating health communication campaigns and related health messages.

It is noteworthy that none of the studies specifically reviewed BSE messages created for young, college aged women, supporting the assertion that this study has met a need for continued research in this area. It was the goal of this study to use existing social science theories to develop an instrument that not only predicted the practice of Breast Self Exam but also aided in the development a focus group protocol that elicited information pertinent to the design of effective health campaign messages for college women.

CHAPTER THREE

METHODOLOGY

Introduction

The present study utilized a formative evaluation design in the creation of messages for a health communication campaign designed to increase the practice of breast self-examination in college-age women. This health communication campaign used a formative evaluation strategy because of its demonstrated success in numerous studies cited in the previous review of the literature.

As noted, formative research preceding the design of a communication campaign is most appropriate when it utilizes the target or intended audience as a source of data for message design. Campaign messages designed without the intended audience's input in the initial stages are usually less effective than those designed with such input. The ultimate purpose of the study was to design campaign messages that would encourage women to attend BSE workshops on a university campus. It was initiated by a formative evaluation designed to examine the relationship of theoretically important variables to the practice of breast self examination in the intended audience of undergraduate women.

Setting

The study was conducted at a large Midwestern state university in August 1995. The enrollment of this university for the year was 39,743, of which 20,379 were women. This university was considered typical of larger Midwestern institutions of higher education based on demographic data gathered from 9 other Midwestern state universities of similar population Barron's (1995).

The Study Sample

A convenience sample of 270 women were selected for the study. All were enrolled during the semester of the study in a required physical education class comprised of all females.

The physical education department was selected as the sampling site because certain of its classes could be targeted that were 100% women in enrollment. Permission was granted by the head of the physical education department to administer the questionnaire during regular class time in several class sections.

The sample population of 18 to 24 year old women enrolled in physical education classes at this particular midwestern university was felt to be representative of the 18 to 24 year old female population of the average large midwestern university primarily because most were freshman university students in a curriculum that required physical education rather than an elective. Also the demographic findings show that 28 religious

and non - religious backgrounds were represented, and 34% of the sample was African American, Asian, Hispanic, Native American or other non-Caucasians.

This sample was chosen because a "Women Empowering Women" project of the university's health clinic had recently targeted undergraduate women for participation in BSE workshops, but attendance had not reached the expected levels.

Plan of the Study

In this study, information was first gathered from personal interviews and through a survey involving individual questionnaires, then through focus group discussions. Additional information was secured from interviews with biomedical practitioners and from information resources such as the American Cancer Society and other cancer education organizations such as National Alliance of Breast Cancer Organizations (NABCO), The Susan G. Komen Breast Cancer Foundation, National Research Council, Institute of Medicine, National Cancer Institute (NCI) and The Cancer Information Service.

Focus Groups

To secure an understanding of the study population (i.e., cultural values, beliefs, norms, and self images), the research first implemented focus group and survey research techniques. According to Atkin and Freimuth (1989), focus groups are "conducted by a moderator who stimulates an extensive open-ended discussion of selected issues in a

small group setting (p. 132)." Mody (1991) cautioned that focus groups should be small, no more than 7 to 8 people.

Within such a group, two or three issues are presented to which there are no right or censored answers. These issues are presented in an open-ended fashion where the facilitator provides the focus only. Stewart and Shamdasani (1990) recommended construction of an interview guide to set the agenda for focus group discussion, recommending that that two general principles should be observed. The first is that questions be ordered from the more general to the more specific; and second, that questions of greatest importance be asked early and those of lesser significance, later.

The present study incorporated the above recommendations. See Appendix II for focus group protocols. Some 25 individuals were invited to participate in three focus groups. These groups were conducted by the researcher. Each lasted approximately one hour and each group had no fewer than 3 participants.

Mody (1991) and others have noted that observation of and listening to the intended audience members is imperative for quality formative evaluation research, suggesting that "findings emerge from conversations among group members, and not from question - answer interactions between interviewer and audience members" (p. 130). The present study used observational methods during the focus group phase to secure important data. The researcher made observational notes during each group and these were transcribed for later analysis.

Focus groups were used in this effort as a part of pre-production audience research. According to Mody (1991), preproduction audience research determines what current level of knowledge the intended audience exhibits with regard to a topic and what

the audience would like to know. Preproduction also includes data collection regarding how an audience would prefer information on the topic be presented to them for reflection, discussion, and/or action.

Examination of Observed and Felt Needs

The next stage of the research was to explore the observed and felt needs of participants, as well as the relationship of these needs to the general goals of the campus BSE health education project. In the beginning of the effort, campus health center staff detailed the knowledge they wanted to convey to young women about breast cancer and BSE. Through formative evaluation methods such as the focus groups and observation, the answers elicited through this project helped to determine what knowledge the subjects already possessed with regard to breast cancer and BSE and what knowledge they needed to acquire. The first half of the research concluded with the development of a specific measurable goal based on: a) the subjects' demonstrated knowledge and attitude levels; b.) the information about the levels of knowledge and attitude campus health professionals hoped to promote; and, c) an estimate of the "gaps" between these two levels. This difference was characterized as "the information subjects need to acquire to promote their attendance at BSE clinics."

A summative evaluation technique was then utilized to determine the internal validity of the data. After results were analyzed, message concepts were developed. The message concepts were next mounted on poster board and presented to the target audience in focus groups for feedback.

Focus groups were re-employed for message concept pretesting, followed by observation and individual questionnaire administration. Modification of the message concepts were then made based upon feedback which ultimately resulted in the development of draft messages.

Draft messages were revised until a consensus of appeal, credibility, utility, comprehension and action eliciting potential was reached. The message framework was then presented to the campus health center to be used for encouraging campus women to attend BSE workshops, thus encouraging the practice of BSE.

Instrumentation

This study used the following instruments: (a) questionnaire to measure the health beliefs, knowledge, efficacy, social normative beliefs and attitudes about breast cancer, media habits and actual practice of BSE: (b) focus group protocols to develop messages for later use in campaign posters and radio spots on campus radio; and (c) personal interview schedules to determine subjects' perceptions of BSE and breast cancer in general.

The Questionnaire

The constructs measured by the research questionnaire included knowledge, seriousness, susceptibility, benefits, barriers, motivation, intention, attitude, subjective norm, self efficacy and response efficacy with respect to BSE. In addition, the intent to

practice and the actual practice of BSE were surveyed. The specific items on the study questionnaire were selected from previous research instruments specifically designed for similar purposes and previously evaluated for their validity and reliability.

Items selected for susceptibility (item 9), seriousness (items 4, 5, 6, 7), benefits (item 12), barriers (all items), and health motivation (all items) were reported by Champion (1984) to have internal consistency reliability coefficients of >.7. Correlation coefficients for test-retest reliability on susceptibility, seriousness, benefits, barriers, and health motivation were also reported at > .7.

Items developed by Stillman (1977) were designed to elicit factual knowledge (items 29, 39, 31, 32), perceived susceptibility (items 10, 11), and perceived benefits (items 13, 14, 15) of BSE. These items were derived from a review of literature and were sample items found in other studies. Items developed by Witte (1995) were primarily efficacy related. Items selected for the attitudinal and normative components of the study were developed by Ajzen and Fishbein (1980) and modified to focus on the specific health risk in this study.

Content validity of the items included on the questionnaire designed for this study was judged by a team of three professors expert in the field of communication research and familiar with HBM, TRA and SLT.

With the assistance of the research supervisor, the 100 items derived from previous instruments related to the 12 variables of interest to this effort were narrowed to a list of 3 to 10 items for each construct subscale. A Likert-scale was constructed for each item, with "7" used to represent "strongly agree" and "1" used to represent "strongly disagree." Missing data was coded with a value of "3" representing "neutral."

For the knowledge items, a response was scored as "7" if correct and "1" incorrect or unanswered.

The BSE practice variables were evaluated in terms of the response to a single item on the questionnaire. For example, actual practice was evaluated by the response to the query: "How frequently do you perform breast self examination?" For this variable, both "weekly" and "monthly" were scored as "7," and all other answers were scored "1."

Intention to practice BSE was also evaluated by a single question: "Do you intend to practice breast self examination monthly?" The response of "yes" was scored as "7" and all other responses were coded "1."

The questionnaire also secured demographic information on each participant which included age, religion and ethnic/racial data. Media source preference items included the time of day a participant used media sources; preferred media used; preferred source for health information; and time of day most convenient for attending BSE workshops. (A copy of the questionnaire is provided in Appendix II).

Data Analysis

Questionnaire results were entered into SPSS-PC for Windows (Version 6.0) for analysis. Personian correlation was used to assess the relationships of health beliefs and knowledge to the practice of BSE. Correlation was also used to measure the relationships of efficacy, intention to practice, subjective normative beliefs and attitude to the practice of BSE. Mean scores of the respondents on demographic and other variables were

calculated, along with standard deviations from these means to provide information on the central tendency of these characteristics.

Human Subjects and Confidentiality Issues

The application for approval of the protocol developed for the focus group sessions, questionnaire, and research consent form were approved by the University Committee on Research Involving Human Subjects (UCRIHS) in August 1995. The approval by UCRIHS is found in Appendix IV.

Prior to completing the questionnaire, participants were assured of anonymity and confidentiality. They were advised that the researcher was a graduate student and of the reasons for the study. Additionally they were advised that the results would be posted in the Physical Education department and they could contact the researcher if they had questions or concerns about the study. It was made clear that participation in the study was voluntary; they would not be graded or judged adversely by their physical education instructor if they chose not to participate.

Consent forms were also distributed in focus group sessions and signed by each participant prior to beginning each session (Consent forms are found in Appendix I).

It was agreed the results of the study would be provided to the director of the campus health center and to the instructor in the physical education department who allowed students time during class to complete questionnaires.

CHAPTER FOUR

RESULTS

Results of Survey Administration

Rate of Response

Questionnaires were distributed to approximately 300 women at a large Midwestern university during their physical education class period. Some 270 questionnaires were returned. This was a response rate of 90%.

Characteristics of Questionnaire Respondents

Respondents ranged in age from 18 to 42, with a mean range of 18 to 21 years. These women were ethnically and racially diverse as is illustrated in Table 1 on the following page which provides a complete breakdown of the demographic characteristics provided by individuals who completed the study questionnaire.

Responses to the Questionnaire

In response to the knowledge questions, 3% of the respondents accurately knew what their likelihood was of developing breast cancer. While 27% of the women knew that most breast lumps turn out to be non-cancerous, 27% of the others did not. In terms of risk, 43% of the women knew at what age their risk of breast cancer would increase and the majority (n= 266) knew that heredity plays an important role in their individual risk for developing breast cancer.

Table 1

Demographic Characteristics of Survey Participants

Demographic Characteristic	Raw Score	Percent of Total
Ethnicity		
African American	65	24
Asian	12	4.1
Caucasian	179	66
Hispanic	3	1.0
Native American	4	1.4
Other	6	2.1
No Answer	21	
Religion		
Catholic	75	27
Christian	25	8.6
Baptist	24	8.3
Lutheran	23	7.9
*All Others Combined	123	45%

*no more than 4% per each of the 23 remaining religions.

In terms of increased of risk of breast cancer past menopause, 38% of the women knew this to be the case while 29% believed that birth control plays an important role in their risk. A large number of women knew all of the etiologic factors associated with developing breast cancer and a similarly large number knew what to do to prevent dying of breast cancer. With 7 representing the most knowledge the overall mean knowledge score was 3.2, with a standard deviation of 1.5.

Reporting their actual practices, 69% (n=188) had performed breast self examination and 30% had not. As to a set schedule of performing BSE, 42% of the respondents report none, and 20% (n=54) reported that they practiced monthly. When asked what time of the month they perform BSE, 15% (n=42) reported performing it at the appropriate time, 7 days after the last menstrual flow. Another 44 reported practicing it at the end of their last menstrual flow, which has some benefit. The majority did not report practicing BSE at the correct time each month.

A high percentage of these college-age women felt they would be able to detect a breast lump with their current level of knowledge and 60% knew at least one of the characteristics of an abnormality that would indicate breast cancer. However 8% (n=22) of women did not know these characteristics and 32% (n=88) did not answer this question.

The majority of women (n=131) reported that they had learned to perform BSE from their physician. Another 41% reported learning from a pamphlet; 16%, from a nurse; 14%, from their mother; 16%, from a health education instructor; 11%, from a

clinic; and 4%, from a friend. Of the respondents, 16% did not answer or said that it did not apply to them.

When asked if they had received a clinical examination by a doctor, 57% (n=155) responded affirmatively, indicating "at least yearly." Another 40% (n=107) reported they had not, while 2% did not answer.

In response to the item about whether they had heard of BSE, 51% (n=138) responded affirmatively, 3% responded negatively, and 123 or 45% did not answer.

Less than 50% of the respondents provided reasons for not performing BSE. Of those that did respond the answers offered most frequently included: "too young;" "don't think about it;" "not sure of the correct way;" and "don't have time."

If provided instruction about the correct way to practice BSE, 67% (n=180) reported they would practice it; 22% said they would not; and 26% did not answer. This question appeared to be easily misunderstood by subjects.

In response to the media questions 50% (n=135) trusted TV news most for their health information; 50% (n=134) trusted magazines; and 48% (n=130) trusted newspapers. About 25% (n=68) trusted newsletters; 3% (n=10) trusted campus radio; 9% (n=25) trusted the Today Show, a network morning program; and. 7% (n=22) did not answer this question.

The majority (75%) of the women listened to campus radio between the hours of 8am to 12 noon; 37% listened between 4-8 pm; 29%, between 8 pm to 12 midnight; and 25%, between noon-4 pm.

Slightly more than half of the women (51%) lived on campus; 34% lived in a dormitory; 27% in an apartment; and 5% at home. Another 5% did not answer. (Off campus and/or "other" were not available as answer choices.)

Of the 270 respondents, 86% believed the restroom would be the best place for posters promoting BSE; 70% believed the student union, women's lounge; 66% believed Olin Health Center; 44%, bulletin boards in classroom buildings; and 38%, in classrooms themselves. Other suggestions were dorm rooms, dorm room bathrooms and showers, and IM Circle showers and locker rooms.

When subjects were asked to whom they turned for answers to health questions, 75% reported they turned to their mother; 50%, friends; 47%, their family physician; 38%, a gynecologist; 11%, a nurse; 2%, a health care facility; and 1% did not answer.

Some 68% of the respondents used a family doctor to meet health care needs; 38%, use a gynecologist; 26% used a clinic; 8%, a nurse; 8% , "other; and 1% did not answer.

Responding to the best time for BSE clinics to be offered, 4 to 8 pm was selected by 66%; noon to 4 pm by 22%; 8am to 12 noon by 8%; another time by 2%; and 5% did not answer.

In response to a request for an address to which a follow up questionnaire could be mailed, 25% complied.

Quantitative Analysis

The eleven variables of the study were analyzed using SPSS-PC statistics. Information about the means and standard deviations are provided in Table 2 below.

Table 2

Means and Standard Deviations of Study Variables

Measure	Mean Score	Std. Dev.
Attitude	5.4	1.4
Subjective Norm	5.2	1.4
Knowledge	3.2	1.5
Self Efficacy	4.6	.73
Response Efficacy	6.2	1.1
Seriousness	4.3	1.0
Susceptibility	3.8	.87
Benefits	4.4	.82
Barriers	1.8	.81
Motivation	4.8	.10
Intention	4.7	1.4

Correlations were computed to ascertain the relationship between health beliefs, knowledge, self-efficacy, response efficacy, (reported) intention to practice and (reported

actual) practice of BSE. Table 3 below provides the correlation matrix for these variables.

Table 3

Correlations between Health Beliefs, Knowledge, Self Efficacy, Response Efficacy, Intention to Practice and Practice of Breast Self Examination

	Bar.	Ben.	Int.	Know.	HM.	RE.	SE.	Ser.	Sus.
Prac.	-.3	-.01	.41	.10	.23	.13	.23	-.12	.03
Bar.		.32	-.24	-.02	-.21	-.22	-.15	.12	.12
Ben.			-.15	-.02	-.10	.21	.03	.22	.10
Int.				.12	.35	.24	.31	-.02	.10
Know.					-.01	.12	.05	-.13	.03
HM.						.21	.14	.05	.01
RE.							.44	.02	-.01
SE.								-.02	-.10
Ser.									.32

N=270

Note: Prac. = Practice Bar. = Barriers
Ben. = Benefits Know. = Knowledge
HM. = Health Motivation RE. = Response Efficacy
SE. = Self Efficacy Ser. = Seriousness
Sus. = Susceptibility Int. = Intention

As Table 3 shows, the (reported) actual practice of BSE showed the strongest positive relationship to (reported) intention to practice BSE, with a correlation of .41.

Actual practice was most strongly negatively correlated with perceived barriers, with a correlation of -.30 . Other negative correlations with actual practice were perceived benefits (r=-.01) and seriousness (r=-.12).

Apart from intention, the practices associated positively with practice included knowledge (r=.10); health motivation (r=.23), response efficacy (r=.13), self efficacy (r=.23) and susceptibility (r=.03). All of these suggest relatively weak associations between the HBM constructs and the practice of BSE in this sample.

Evaluation of the Study Hypotheses Based on Survey Results

Hypothesis 1

The first hypothesis of the study was that attitude and subjective norm are positively related to a college woman's practice of BSE.

The analysis of this hypothesis used subjects' responses to questions related to attitude, subjective norm and intention to practice BSE. Table 4 on the following page provides the correlation matrix for these variables.

Table 4

Correlations Between Attitude and Subjective Norm and Intention to Practice Breast Self Examination

	Subjective Norm	Attitude
Intention	.49	.48
Subjective Norm		.42

N = 270

As Table 4 demonstrates, there was a moderate positive correlation between subjective norm and a woman's intention to practice BSE, between a woman's attitude and her intention to practice BSE, and between the independent variables of subjective norm and attitude themselves. These results suggest that subjective norm and attitude are related constructs, with an almost identical relationship to a woman's intention to practice BSE. These results support the conclusion that respondents who felt more strongly that BSE was important reported a somewhat greater intention to perform BSE than respondents who felt less strongly about the practice. Similarly, respondents who had influential people around them who felt strongly that performing BSE is important reported a somewhat greater intention to practice BSE than individuals who lacked such influencers. Such data provided moderate support for the first hypothesis.

Hypotheses 2 and 3

The second hypothesis of the study was that knowledge of breast cancer and BSE are positively related to a college woman's practice of BSE.

The third hypothesis was that self efficacy and response efficacy are positively related to a college woman's practice of BSE.

Table 5 below displays the correlation of knowledge, self efficacy, and response efficacy to women's (reported) practice of BSE.

Table 5

Correlations Between Knowledge, Self Efficacy and Response Efficacy with Practice of Breast Self Examination

Variable	r	r^2	F
Knowledge	.08	.01	1.7
Self Efficacy	.23	.05	15.
Response Efficacy	.13	.02	4.8

N = 270

As is evident, none of these variables independently were associated with a significant amount of the variation in the (reported) practice of breast self examination in these respondents. The correlation between knowledge and BSE practice was .08, indicating a very weak association for these subjects between these two variables.

Differences (variations) in these college women's knowledge about BSE and breast cancer accounts for a insubstantial amount of the variation in their practice of BSE.

This weak correlation indicates that even those who had the greatest knowledge about breast cancer did not (report) practicing BSE. Knowledge of BSE and breast cancer was a weak predictor of BSE practice in these subjects. This data does not support hypothesis 2.

In evaluating the relationship between the practice of BSE and self efficacy and response efficacy, Table 5 shows that the strength of these associations was also weak. The correlation of self efficacy to (reported) BSE practice was .23. Item 2 of the self efficacy scale was the most highly associated with variance in the practice of BSE, an item correlation of .34, while Item # 1 of this scale showed a negative correlation of -.21. The r^2 for all self efficacy items and the practice of BSE was .05, indicating self efficacy has only a very weak association with practice.

The correlation of response efficacy to practice of BSE was .13, indicating still another weak association. The r^2 was .02, an indication that this construct is not associated in a significant way with practice of BSE in these subjects.

These results suggest that even women who believe they are able to successfully perform BSE or believe that performing BSE will produce a desired outcome are no more likely to practice BSE than individuals who do not have such beliefs.

These results do not provide support for hypothesis 3.

Hypothesis 4

The study's fourth hypothesis was that seriousness, susceptibility, benefits, and motivation together are positively related to a college woman's practice of BSE.

Correlations of the practice of breast self examination with seriousness, susceptibility, perceived benefits, perceived barriers, and health motivation as the independent variables are shown in Table 6 below.

Table 6

Correlations Between Seriousness, Susceptibility, Benefits and Motivation with Practice of Breast Self Examination

Variable	r	r^2	F
Seriousness	.12	.01	3.8
Susceptibility	.03	.001	.19
Benefits	.09	.01	2.3
Barriers	.26	.07	19.8
Health Motivation	.23	.05	15.2

N = 270

As is evident, none of these variables independently are associated with a significant amount of the variation in the (reported) practice of breast self examination in these respondents. The coefficients describing the relationship of independent variables seriousness, susceptibility, perceived benefits, perceived barriers, and health motivation to the dependent variable, practice of BSE, are as follows:

The correlation of seriousness with actual practice was .12, indicating a weak relationship. The r^2 was .01, an indication that this construct is not highly associated with BSE practice in this sample. This result supports the interpretation that that as the degree

of seriousness of breast cancer increases, the woman's practice of breast self exam does not vary in the same direction. This data does not support hypothesis.

The correlation between susceptibility and actual practice was .03, another very weak relationship. The r^2 for susceptibility construct was .001. Such a result suggests that women who feel more susceptible to breast cancer are no more likely to practice of BSE than those who feel less susceptible. This data does not support the hypothesis.

The correlation between perceived benefit and actual practice of BSE was .09, indicative of yet another weak association. The r^2 for the construct perceived benefit was .0008 which provides confirmation that it was not a significant predictor of BSE practice in this sample. Interpretation of this finding suggests that even though an individual views the practice of BSE as beneficial to her well-being she does not necessarily practice BSE. This data does not support rejection of the null hypothesis.

The correlation between health motivation and practice of BSE was correlation was .23, a weak correlation. The r^2 was .05, indicating that health motivation is not highly associated with BSE practice. Interpretation of this finding suggests that as a woman's good health habits and healthy lifestyle choices increase, her actual performance of BSE does not necessarily increase accordingly. This data does not support the hypothesis.

Further analysis of HBM constructs seriousness, susceptibility, perceived benefits and health motivation shows that although none of these variables independently was highly associated with practice of BSE, when all five were combined the correlation was .46, and the r^2 was .22. This finding suggests that slightly more than one-fifth of the variance in practice of BSE can be explained by the combination of these factors, a

finding which lends some support to the usefulness of these constructs of the HBM considered in combination for predicting practice of BSE. Such a finding lends support to hypothesis 4.

Hypothesis 5

The study's fifth hypothesis was that a college woman's intention to practice BSE is positively related to her actual practice of BSE. The relationship between the practice of breast self examination and the intention to practice breast self examination was explored with the calculation of their correlation. The result was an r of .41, indicative of a modest correlation between these two variables. The r^2 was .17, providing an estimate of the extent to which variations in intent are associated with variations in actual practice. An interpretation of this finding is that 17% of the variance in actual practice was associated with variations in the intention to practice. This supports the notion that as a woman's intention to practice breast self examination increases so does her actual practice of BSE to a modest degree. Such a result provides some support for the fifth hypothesis.

Hypothesis 6

This study's sixth hypothesis predicted a negative relationship between the health belief barriers and a woman's actual practice of BSE. The observed correlation between barriers and practice was -.30, indicative of a moderate association between these two variables. The r^2 was .09, suggesting that slightly less than 10 percent of the variation in

the practice of BSE could be explained by variations in health belief barriers. These findings can be interpreted that women who perceived the most barriers were least likely to practice BSE, and those who perceived the fewest were most likely to practice BSE.

The results provide support for hypothesis 6.

Results From Focus Groups

Characteristics of Focus Group Participants

The focus group participants were 18 to 24 year old women from either the physical education classes where the questionnaires were administered or from a cohort of graduate students working at the campus health center. These women volunteered to attend the focus group sessions.

Focus Group Responses

Most focus group participants reported at least some knowledge of breast self examination. The highest percentage of women reported no feelings, either positive or negative, about the practice.

When asked to describe prevention strategies for breast cancer, the majority of focus group participants named at least two. Almost every participant included "diet" or "a low fat diet" among their responses.

To related questions about what they would like to know more about with regard to breast cancer and BSE, most participants described a felt need for instruction about the correct way of performing BSE.

In their responses, most women demonstrated confusion between the concepts of "risk factors" and "prevention strategies." The majority had knowledge about heredity as a risk factor. In general, most focus group participants felt they were too young to be concerned about breast cancer.

Although most women had heard about BSE, none felt over-informed on the topic.

When asked to describe the most effective way to prevent dying from breast cancer, most women were confused.

The majority of focus group participants had not been trained by their primary care physician to perform BSE; however, most had been given a clinical examination by such a physician and been provided with BSE brochures.

Describing the frequency and content of BSE discussions with their friends, the most predominant response from group members was that this was not a topic for discussion.

None of the participants reported cultural or religious beliefs they believed would prevent them from performing BSE. In response to a query about whether practicing BSE made them uncomfortable, a few answered that it did not, but the general feeling was that it did.

Nearly all felt uncomfortable talking about the practice with friends. Most said they did not perform BSE, at least not according to any regular schedule.

For those that did practice, the reasons for doing so ranged from coming to the health clinic at MSU; concern with an heredity factor; and a mother or grandmother's encouragement.

Most felt that if they got breast cancer it would be serious, primarily because they felt that cancer itself is always serious. Some participants believed that if they developed breast cancer they would probably die. Some knew the different treatments available; and those that did said they would live because of the many new treatment methods. Most of those had relatives who had survived cancer.

None of the women had an opinion about whether they would have a lumpectomy or mastectomy if breast cancer were diagnosed. All felt that breast cancer is a severe disease.

Only one women felt that she was at risk for breast cancer because of heredity factors. Most felt they were not at risk because they were too young. Only one women had relatives or friends that she felt were at risk for breast cancer, and that was because of their heredity factors. Most others felt their friends were not at risk because they were too young. Most women had never thought about getting breast cancer, because they felt they were too young to do so.

Most women felt that detecting breast lumps did not protect them from serious harm. Most felt that it would be too late if you already had a lump. Early detection did not seem to be a concept which had made a serious impact on their belief systems.

Most felt that performing breast self exam was an effective way of detecting breast lumps, but only one women was well versed in early detection.

When asked if they felt that early detection through breast self exam saves lives, most didn't know for sure, but acknowledged that that it "probably was."

Most women felt neither themselves or their friends would be able to detect a breast lump with BSE. Of those who had performed BSE, most had done so because it had been suggested by their physician. When asked why they had not practiced BSE, not most either didn't know how to do so, or had never thought about breast cancer or its detection.

Those that knew about BSE either learned at the campus clinic or from their physician or a nurse. The few that did perform BSE began originally because either breast cancer was hereditary in their family or that their physician had recommended it.

When asked what they looked for when performing BSE, nearly all those who practiced reported "lumps." Most of these could provide no other specifics.

Only the few who performed regularly could explain the procedure for BSE.

Most didn't know whether or not their friends perform breast self exam to detect cancer. They said they didn't know because they didn't talk with friends about it. They could provide no reason for not talking about the topic.

Response to BSE Campaign Messages

Because there were so many messages to begin with and the original message rating protocol was so lengthy, the focus group participants were asked to collectively examine all campaign slogans/posters and decide which three messages they felt would be most effective in a campaign to promote attendance at campus BSE workshops. They

were also instructed to provide candid comments on any changes they would make in these messages.

During a brainstorming period, the messages were revised to comport with focus group members' suggestions and comments.

Rating of Messages

For efficiency sake, the original protocol questions were generalized to secure feedback on all of the messages collectively, rather for each individual message. The responses from the focus groups were as follows:

Overall the level of seriousness about cancer implied in the messages was rated high. On a scale from 1 to 10 (with 10 the highest), focus group participants rated the material in the messages as 10.

In explanation for this high rating, participants noted that the messages dealt with death, considered a very serious topic. It was their opinion that the messages strongly conveyed the connection between breast cancer and death.

Rating the level of risk for breast cancer communicated in these materials, participants determined the messages achieved a 7, indicating a high moderate level.

No participants reported that any message made them feel that they personally would develop breast cancer. They reported continuing to feel they were too young for this to occur even after reading the messages.

When asked if the messages made them feel that their friends or family members might develop breast cancer, they once again reported that these materials did not

communicate this message. It was their belief that their friends, in particular, were too young for breast cancer to be a real threat. Some did acknowledge that their mothers or older relatives might develop breast cancer because they are older. The need for older women to practice BSE was apparently communicated by the messages more strongly than the need for college age women to do so.

In contrast, all participants were clear that the messages encouraged participation in BSE clinics on campus. There was unanimity that, after revision, the messages would be effective in encouraging women, including their family and friends, to attend breast self exam clinics. Participants felt the responses would be effective in encouraging women to learn more about BSE, for both their family, friends and campus women in general.

When asked if they felt their friends or family would think these messages would be effective in encouraging women to learn more about BSE, they responded affirmatively; however, in response to a query about whether specific responses to the messages would prevent them from dying from breast cancer, they responded simply that such responses may or they didn't know. One women answered this query affirmatively.

In terms of whether the other materials available in the focus group session would increase their ability to perform breast self exam, participants noted that brochures from the American Cancer Society were good, and information sheets formatted to hang in the shower (shower hangers) were even better. The women reported that the materials made them feel capable of successfully perform BSE. They further noted that the on campus clinics "make you feel like there is something you can do about breast cancer, such as attend and learn how to do BSE."

Asked if they felt BSE workshop participation would make their friends or family members more confident about performing breast self exam, participants answered affirmatively "because they would be trained by people who know what they are doing."

Other comments and suggestions offered by the women included:

1. Statistics really catch the eye. Add the number of women that die at the age of 20. Smaller ratios are better.

2. The posters really make me think about my own mortality.

3. Women don't have the patience, they just don't want to take time for it (BSE).

4. Focus should always be on the positive like the fact that BSE is cheap and saves lives. Here's Ruth, mother of 4, she does something for 5 minutes each month that doesn't cost her anything and saves her life.

5. Make a list of things that take 5 minutes, music video, brush your teeth, take a shower, BSE. Stress that 5 minutes a month could save your life. Do you have the time?

6. Most women our age aren't overly concerned. You don't want to scare them, just make them think about it. They are concerned enough to take positive action but not worry about it.

7. Women aren't adding it to their list of priorities. The 50% that don't do it probably don't know how to do it.

In response to a query about the best placement of informational posters on campus and other dissemination strategies, the following were recommended by the focus groups:

1. In the showers or somewhere that you see it every day.

2. Get the resident assistants (of dormitories) involved, they have to do a certain amount of programming anyway.

3. At sororities

4. The campus health center

Most of the focus group participants were involved in offering suggestions about all aspects of the messages and placement, but most did not want to get too structured or take the time to fill out the forms provided. Most had already agreed to fill out the survey questionnaire.

A few focus group participants related anecdotes related to BSE and breast cancer that were of interest to the study. For example, one student related that her father who is a gynecologist doesn't feel the need for her to learn BSE, or have annual pelvic examinations. She expressed frustration at his attitude. The focus group provided a comfortable forum for her to vent those frustrations. Another woman described feeling very sheltered by her parents and isolated by the size of the campus. She expressed a need for someone to answer questions that had been concerning her. Without answering any medical questions, a referral was provided to the campus health clinic where she could get the information she was seeking.

Women in the focus group used the experience to answer one another's questions about breast cancer and a certain camaraderie developed during the sessions.

Message Development

The following messages were developed from the focus group sessions, incorporating findings from the survey. Those messages in italics were selected as the most effective by the majority of focus group participants.

1. EARLY DETECTION OF BREAST CANCER ONLY WORKS
IF YOU KNOW HOW
ATTEND BREAST SELF EXAM CLINICS AND LEARN THE
RIGHT WAY TO DO BREAST SELF EXAM

2. BREAST SELF EXAM CAN BE DIFFICULT TO DO
EFFECTIVELY WITHOUT INSTRUCTION
LEARN FROM TRAINED PROFESSIONALS
ATTEND CAMPUS CLINICS

3. *IT'S NOT UNUSUAL TO NOT KNOW HOW TO DO BREAST SELF EXAM*
LEARN THE RIGHT WAY
ATTEND CAMPUS BSE CLINICS

4. WHAT DOES A 20 YEAR OLD WOMAN

DO TO PREVENT DYING FROM BREAST CANCER?

LEARN BREAST SELF EXAM

EARLY DETECTION SAVES LIVES

ATTEND CAMPUS BREAST SELF EXAM CLINICS

5. ADD BREAST SELF EXAM TO YOUR LIST OF

GOOD HEALTH HABITS

ATTEND BREAST SELF EXAM CLINICS

AND DO IT RIGHT FOR LIFE

6. AT AGE 20, WHEN A MAMMOGRAM ISN'T RECOMMENDED

WHAT IS OUR EARLY DEFENSE

AGAINST DYING FROM BREAST CANCER?

LEARN BREAST SELF EXAM

IT'S SAFE AND IT'S EASY,

WHEN WE LEARN

IT FROM TRAINED PROFESSIONALS

ATTEND BSE CLINICS ON CAMPUS NOW!

7. MAMMOGRAM ISN'T SAFE FOR WOMEN

UNDER THE AGE OF 35

BE SAFE

LEARN HOW TO DO BREAST SELF EXAM

ATTEND BREAST SELF EXAM CLINICS

8. PROTECT YOURSELF FROM DYING OF BREAST CANCER

LEARN BREAST SELF EXAM

FROM TRAINED WOMEN WHO CARE

9. RADIO SPOT: *DOING BREAST SELF EXAM IS LIKE EXERCISING*

IT DOESN'T WORK IF YOU DON'T DO IT RIGHT

LEARN HOW AND MAKE IT PART

OF YOUR REGULAR HEALTH REGIMEN

ATTEND BREAST SELF EXAM CLINICS

10. YOU'VE READ THE HOW TO BROCHURES

YOU'VE HEARD THE WARNINGS

NOW ATTEND THE CLINIC AND LEARN TO BREAST SELF EXAM

IT COULD SAVE YOUR LIFE!

11. EARLY DETECTION OF BREAST CANCER
EQUALS A LOWER RISK OF DYING
MAKE BREAST SELF EXAM A PART OF YOUR REGULAR
HEALTH REGIMEN
LEARN IT RIGHT FOR LIFE
ATTEND BREAST SELF EXAM CLINICS

12. BREAST SELF EXAM IS FREE
IT'S SAFE
AND IT'S EFFECTIVE WHEN YOU LEARN IT RIGHT
ATTEND BREAST SELF EXAMINATION CLINICS AND LEARN
HOW FROM TRAINED WOMEN WHO CARE!

13. RADIO SPOT: *AN ESTIMATED 46,000 WOMEN WILL DIE*
182,000 MORE WILL BE DIAGNOSED
WITH BREAST CANCER IN THE U.S. IN 1995
DON'T BECOME (BE) ANOTHER STATISTIC
EARLY DETECTION EQUALS GREATER CURE RATE
ATTEND BREAST SELF EXAM CLINICS
AND LEARN HOW NOW!

14. *THE MAJORITY OF BREAST TUMORS*
ARE FOUND BY WOMEN THEMSELVES
TUMORS FOUND EARLY SAVE LIVES
LEARN BREAST SELF EXAM
BEFORE IT'S TOO LATE!

15. *YOU MAY NOT BE ABLE TO CONTROL*
YOUR PERSONAL RISK FOR BREAST CANCER
YOU <u>CAN</u> REDUCE YOUR RISK OF DEATH
THROUGH EARLY DETECTION
LEARN HOW, LEARN NOW
ATTEND BREAST SELF EXAM CLINICS

16. IF MOST WOMEN KNOW REGULAR BREAST SELF EXAMINATION IS
THE RIGHT THING TO DO
WHY THEN DO LESS THAN 50% DO IT?
DON'T (BE A) ADD TO THAT STATISTIC
ATTEND BREAST SELF EXAM CLINICS
EMPOWERMENT COULD MEAN YOUR LIFE!

17. BEING EMPOWERED MEANS: TAKING CHARGE OF YOUR LIFE;
DEMANDING QUALITY MEDICAL CARE
PRACTICING BSE WHEN NO ONE YOU KNOW DOES
ATTENDING BREAST SELF EXAM CLINICS
AND LEARNING HOW FROM EMPOWERED WOMEN WHO CARE
EMPOWERMENT COULD SAVE YOUR LIFE!

CHAPTER FIVE

CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

This thesis was developed to specifically look at three different social science theories as they relate to the prediction of breast self exam practice in college-aged women and to develop messages that incorporate this information which encourage young women to attend BSE clinics on campus. The long-term goal was to support women's participation in the process of learning how to correctly perform BSE, establishing an early health habit that can detect breast cancer at an earlier, more treatable stage, and possibly become a life saving act.

Of those women who did practice BSE only a small percentage were doing it correctly, an indication that practice skill was low. A large majority indicated they would practice if provided instruction in how to do so.

According to the SLT, efficacy expectations must be high for a person to perform an action that will avert a particular health threat. Therefore this study recommends the inclusion of outcome expectations for the campaign messages, which is a person's belief that a particular behavior will produce a specific outcome.

Based on the data gathered, it is evident that the most effective messages for a campaign to increase women's participation in BSE workshops should target attitude change and incorporate the significant referent groups associated with the intended audience for the campaign. Informational and motivational campaigns should target the motivation to comply by reminding the intended audience of the value they attach to the opinions of others they respect.

Utilization of the HBM variables resulted in gathering useful information about the women as a means of understanding, predicting, and identifying their potential for changing behaviors related to health. According to the HBM, the likelihood of action is determined by considering the benefits of taking action as opposed to any barriers to action that may exist. These determinants are, in turn, affected by the individual's beliefs about the threat of developing breast disease, which are influenced by variables of perceived seriousness of the condition. According to the model, sex, age, personality, peer groups, and an individual's previous experiences with the condition are all factors that have an impact on the likelihood of action, as are such action cues as media reports and mass education campaigns.

According to the findings, a majority of women knew all of the etiological factors associated with breast cancer and a majority knew at least one of the characteristics of breast cancer. The overall knowledge level of about breast cancer, however, was only moderate indicating the need for the campaign messages to include factual information about breast cancer.

Since the target audience for BSE workshops exhibited at least some interest in continued good health, the campaign messages should also remind women that a good health regimen includes BSE.

Preliminary evaluation also suggested the target audience believed BSE is important but they did not practice it because they did not feel susceptible to breast cancer. Effective messages should emphasize informational statistics on, such as figures on the large number of breast tumors which are found by women themselves, thus encouraging the belief that performing BSE will be a benefit at any age.

The implications for this thesis include that informational and motivational campaigns are necessary to increase utilization of BSE clinics at university campuses. In addition, this study demonstrates that formative evaluation techniques of using focus groups and questionnaires can be of benefit in creating high quality, targeted messages.

Limitations of this research and analysis include the inability of the effort to evaluate the knowledge, attitudes and behaviors of college women on this campus after exposure to the messages. This would have provided valuable feedback on the effectiveness of the messages. Also, one cannot conclude this studies results to be generalizable to the population at large.

Despite its limitations, however, this thesis lays the groundwork for further, more intense analysis of this problem.

BIBLIOGRAPHY

BIBLIOGRAPHY

Ajzen, I., & Fishbein, M. (1973). Attitudinal and normative variables as predictors of specific behaviors. Journal of Personality and Social Psychology, 27, 41-57.

Ajzen, I and Fishbein, M. (1977). Attitude-behavior relations: A theoretical analysis and review of empirical research. Psychological Bulletin,84, 888-918.

Ajzen, I., & Fishbein, M. (1980). Understanding attitudes and predicting social behavior. Englewood Cliffs, NJ: Prentice-Hall.

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl & J. Beckman (Eds.), Action control (pp.11-39). New York: Springer.

Ajzen, I. (1988). Attitudes, personality, and behavior. Buckingham: Open University Press.

Ajzen, I., & Madden, T. J. (1986). Prediction of goal directed behavior:Attitudes, intentions, and perceived behavioral control. Journal of Experimental Social Psychology, 22, 453-474.

Atkin, C., & Freimuth, V. (1989). Formative evaluation research in campaign design. In R. Rice & Atkin (Eds.), Public communication campaigns (2nd ed., pp. 131-150). Beverly Hills, CA: Sage.

Alagna, S., Morokoff, P., Bevett, J., & Reddy, D. (1987. Performance of breast self-examination by women at high risk for breast cancer. Women and Health, 12(21), 29-46.

Bandura, A. (1977a). Self-efficacy: Toward a unifying theory of behavioral change. Psychological Review, 84(2), 191-215.

Bandura, A. (1977b). Social learning theory. Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. (1982). Self-efficacy mechanism in human agency. American Psychologist, 37(2), 122-147.

Bandura, A. (1983). Self-efficacy determinants of anticipated fears and calamities. Journal of Personality and Social Psychology, 45, 464-469.

Becker, M.H., Drachman, R.H., & Kirscht, J.P.(1974). A new approach to explaining sick-role behavior in low income populations. American Journal of Public Health, 64, 205-216.

Becker, M.H. (Ed) (1974). The health belief model and personal health behavior. Thorofare, N.J.: Charles B. Slack.

Calnan, M., & Moss, S. (1984). The health belief model in compliance with education given at a class in breast self-examination. Journal of Health and Social Behavior, 25, 198-210.

Calnan, M. and Rutter, D. R. (1986). Do health beliefs predict health behavior? An analysis of breast self examination. Social Science Medicine, 22(6), 673-678.

Champion, V.C. (1984). Instrument development for health belief model constructs. Advances in Nursing Science, 6(3), 73-85.

Champion, V.C. (1985). Use of the health belief model in determining frequency of self breast examination. Research in Nursing and Health, 8, 373-379.

Champion, V. L.(1987). The relationship of breast self-examination to health belief model variables. Research in Nursing & Health, 10, 375-382.

Champion, V. L. (1988). Attitudinal variables related to intention, frequency and proficiency of breast self-examination in women 35 and older. Research in Nursing and Health, 11, 283-291.

Champion, V. L. (1991). The relationship of selected variables to breast cancer detection behaviors in women 35 and older. Oncology Nursing Forum, 18(4), 733-739.

Champion, V. L. & Miller, T. K. (1992). Variables related to breast self-examination. Psychology of Women Quarterly, 16 (1992), 81-96.

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

Fishbein, M., & Ajzen, I. (1975). Belief, attitude, intention and behavior:An introduction to theory and research. Reading, MA:Addison-Wesley.

Foster, R.S., Lang SP, Costanza, M.C., Worden, J.K., Haines, C.R., & Yates, J.W.(1978). Breast self-examination practices and breast cancer stage. New England Journal of Medicine, 299, 265-70.

Foster, R.S., & Costanza, M.C. (1984). Breast self-examination practices and breast cancer survival. Cancer, 53, 999-1005.

Grady, K.E. (1988). Older women and the practice of breast self-examination. Psychology of Women Quarterly,12(4),73-87.

Grady, K.E. (1992). The efficacy of breast self-examination. The Journals of Gerontology, 47, 69-74.

Greenwald, P.; Nasca, P.; Lawrence, E.; et al.(1978) Estimated effect of breast self-examination and routine physical examinations on breast cancer mortality. New England Journal of Medicine, 299(6), 271-273.

Hallal, J. (1982). The relationship of health beliefs, health locus of control,and self concept to the practice of breast self-examination in adult women. Nursing Research, 31(3), 137-142.

Hallal, J. (1983). A descriptive analysis of knowledge about breast cancer. Health Values: Achieving High Level of Wellness, 7(4), 11-14.

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

Janz, N., & Becker, M. (1984). The health belief model: A decade later. Health Education Quarterly, 11, 1-47.

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

Maimen, L., & Becker, M. (1974). The health belief model & origins and correlates in psychological theory. In M. Becker (Ed.). The health belief model and personal health behavior, pp. 9-26. Thorofare, N.J.: Charles B. Slack.

Mant, D., Vessey, M.P., Neil, A., McPherson, K., Jones, L.(1986). Breast self examination and breast cancer stage at diagnosis. Breast Cancer Journal, 55, 207-11.

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

Mody, B. (1991). Designing messages for development of communication. Newbury Park: Sage.

Ogawa, H., Tominaga, S., Yoshida, M., Kubo, K., Takeuchi, S.(1987). Breast self-examination practice and clinical stage of breast cancer. Japanese Journal of Cancer Research, 78, 447-52.

Philip, J., Harris, W.G., Flahety, C., Joslin, C.A.F.(1986). Clinical measures to assess the practice and efficiency of breast self-examination. Cancer, 58, 973-7.

Rosenstock, I. M., Strecher, V. J., & Becker, M. H. (1988). Social learning theory and the Health Belief Model. Health Education Quarterly, 15(2), 175-183.

Stewart, D. N., & Shamdasani, (1990). Focus Groups. Newbury Park: Sage.

Stillman, M. (1977). Women's health beliefs about breast cancer and breast self-examination. Nursing Research, 26(2), 121-127.

Strecher, V. J., McEvoy DeVeilis, B., Becker, M. H., and Rosenstock, I.M. (1986). The role of self-efficacy in achieving health behavior change. Health Education Quarterly, 13(1), 73-91.

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

Turnbull, E. (1978). Effect of basic preventative health practices and mass media on the practice of breast self-examination. Nursing Research, 27(2), 98-102.

Witte, K. (1995). Using the persuasive health message framework to generate effective campaign messages. In E. Maibach and R.L. Panott (Eds.). Designing health messages, pp. 65-80. Thousand Oaks, CA: Sage.

American Cancer Society , Inc. (ACS) Cancer Facts & Figures, 1994.

American Cancer Society Research News, 1994. Atlanta, GA.

Institute Of Medicine, Improving America's Diet and Health, National Academy Press, Washington, D.C., 1991.

Institute Of Medicine, Eat for Life, National Academy Press, Washington,D.C., 1992.

National Alliance of Breast Cancer Organizations

National Cancer Institute (NCI), Breast Cancer Risk Factors.

National Research Council, Diet and Health: Implications for Reducing Chronic Disease Risk National Academy Press, Washington, D.C., 1989.

National Research Council, Recommended Dietary Allowances, National Academy Press, Washington, D.C., 1989.

The Cancer Information Service (CIS), Cancer Facts, 1993. Detroit, MI.

The Opinion Research Corporation, 1980.

The Susan G. Komen Breast Cancer Foundation

APPENDICES

APPENDIX I

Research Consent Form

This focus group session is being used as a method of gathering research for a thesis project. This research will be used to design messages that will encourage university women, like yourselves, to attend breast self-examination workshops, designed to teach women how to correctly perform breast self- examination. In focus groups there are no right or wrong answers.

This focus group session will take 30 minutes to one hour.

The subjects participating in this focus groups freely consent to participate; participation is voluntary; subjects may choose not to participate at all, may refuse to answer certain questions or may leave the focus group session at any time without penalty.

All results will be treated with strict confidence and the subjects will remain anonymous in any report of research findings; on request and within these restrictions results may be available to subjects.

Contact Pamela Gallina at 616-949-3739 regarding any questions or concerns that may have been raised by participating in this study.

_____

Research Subject Signature

APPENDIX II

Focus Group Protocol

Introduction

[Statement of purpose, goals, informed consent, rapport building time.]

Hello my name is Pam Gallina.

I want to thank you all for taking the time to come here tonight. I know you're all very busy and I want you to feel free to leave at any time if you have something that's pressing. I will try to keep this short, you should be out of here in 30 to 45 min.

I'll start by telling you a little bit about myself.

I'm a graduate student in the communications department, my main focus is communicating health information through messages.

I've come to you because I'm working on my thesis and I need your help to learn some of the best ways to reach campus women with information regarding breast cancer and breast self examination.

SECTION I. KNOWLEDGE OF BREAST CANCER AND BREAST SELF EXAM; Perceived Recommended Responses

First I would like to find out what you know about breast self exam?

Question 1. What are the prevention strategies for breast cancer?

Probe 1.How many of them can you list?

Probe 2. What would you like to know more about with regard to breast cancer.

Probe 3. What would you like know more about with regard to breast self exam.

Question 2. Do you know what a risk factor is.

Probe 1. How many of them can you list?

Probe 2. How do you feel about breast cancer?

Probe 3. Do you feel over or under informed about breast cancer?

Question 3. What is the most effective way to prevent dying of breast cancer?

Probe 1. Do you discuss BSE with your doctor or primary caregiver?

Probe 2. Do you discuss BSE with your friends?

Probe 3. Do you have any cultural or religious beliefs that would keep you from performing breast self exam?

Question 4. What is breast self exam?

Probe 1. How do you feel about breast self exam?

Probe 2. Does it make you feel uncomfortable to do a Breast self exam?

Probe 3. Are you uncomfortable talking about it with friends?

Probe 4. Do you perform breast self exam?

Probe 5. What made you begin doing breast self exam?

SECTION II. PERCEPTIONS OF THREAT AND EFFICACY

(THREAT - SEVERITY)

Now let's talk about your personal beliefs.

Question 1. Do you think that if you got breast cancer it would be serious? Why or why not?

Question 2. What might happen if you got breast cancer?

Probe 1. Do you think you would live or die?

Probe 2. Do you think you would have a lumpectomy or mastectomy?

Probe 3. Do you think breast cancer is a severe disease?

(THREAT - SUSCEPTIBILITY)

Question 3. Do you believe that you are at risk for breast cancer? Why or why not?

Probe 1. Do you have relatives or friends that are at risk for breast cancer? Why or why not?

Probe 2. Do you think you might get breast cancer? Why or why not?

(EFFICACY - RESPONSE EFFICACY)

Let's talk about some responses to breast self exam.

Question 4. Do you think that detecting breast lumps protects you from serious harm? Why or Why not?

Question 5. Do you think that performing breast self exam is an effective way of detecting breast lumps? Why or why not?

Question 6. Do you think that early detection through breast self exam saves lives.

(EFFICACY - SELF-EFFICACY)

Question 8. Do you believe you are able to detect a breast lump with BSE?

Question 9. Do you believe your friends are able to detect a breast lump with BSE?

SECTION III. BEHAVIORS ENACTED.

Question 1. Have you ever performed breast self exam to detect cancer? Why or why not?

Probe 1.Where did you learn?

Probe 2. What made you begin performing BSE?

Probe 3. What do you look for when performing BSE?

Probe 4. Can you explain the procedure for BSE?

Question 2. Do your friends perform breast self exam to detect cancer? Why or why not?

Probe 1. Where did they learn?

Probe 2. What made them begin performing BSE?

SECTION IV. REACTIONS TO EXISTING CAMPAIGN MATERIALS.

Now we're going to look at the campaign materials that were developed to promote breast cancer awareness and to encourage women to attend breast self exam workshops. Again, we want your honest opinions. Remember no one will know that you participated in this discussion, so feel free to say what you want.

(FOR EACH SET OF CAMPAIGN MATERIALS, THE FOLLOWING ARE ASSESSED.)

(THREAT - SEVERITY)

Question 1. What level of seriousness or significance with regard to breast cancer is implied in these material? Why do you say that?

(THREAT - SUSCEPTIBILITY)

Question 2. What level of risk for breast cancer is implied in these materials?

Probe 1. Does it make you feel like you may get breast cancer? Why or why not?

Probe 2. Does it make you think your friends' or family might get breast cancer? Why or why not?

(EFFICACY - RESPONSE EFFICACY)

Question 3. What kinds of responses do these materials recommend?

Probe 1. Do you think these responses are effective in encouraging women to attend breast self exam clinics?

Probe 2. Do think your friends or family would think these responses are effective in encouraging women to attend BSE clinics?

Probe 3. Do you think these responses are effective in encouraging women to learn more about BSE?

Probe 4. Do you think your friends or family would think these responses are effective in encouraging women to learn more about BSE?

Probe 5. Do you think these responses will prevent you from dying from breast cancer?

EFFICACY - SELF-EFFICACY)

Question 4. Do you think these materials increase your own ability to perform breast self exam?

Probe 1. Do these materials make you feel like you can successfully perform the breast self exam? Why or why not?

Probe 2. Do you think these materials would make your friends or family believe they would be able to perform breast self exam? Why or why not?

APPENDIX III

Questions for the practitioner:

1. What is the health threat? _____

2. What is the recommended response to avert the health threat (the specific goal of the campaign)? _____

3. Who is the target audience? _____

(describe in demographic, psychographic, cultural terms)

* items that will be reverse scored

** All construct labels are removed from actual questionnaire.

Questions for the target audience:

This questionnaire will be used to design media messages that will encourage and predict attendance by campus women at upcoming breast self exam clinics being conducted on campus. This questionnaire will take approximately 15 minutes to fill out. Your answers will be treated with strict confidence and you will remain anonymous unless you choose otherwise by adding your name at the end. You indicate your voluntary agreement to participate in this project by completing and returning this questionnaire. Please answer each question by either circling your answer or by filling in the blank. Please fill out and mail in enclosed envelope within 24 hours. Your response is appreciated.

STUDY QUESTIONNAIRE

1. What is your age? 18-21 22-28 29-35 36-42
43-50 Over 50

2. What is your Ethnic background?

African American _____

Asian _____

Caucasian _____

Hispanic _____

Native American ____

Other _____

3. What is your religion?_____

** Seriousness

4. Breast cancer is a hopeless disease.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

5. My feelings about myself would change if I got breast cancer.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

6. If I got breast cancer, it would be more serious than other diseases.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

7. If I had breast cancer, my whole life would change.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

8. Breast cancer is a serious disease.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

** Susceptibility

9. My physical health makes it more likely that I will get breast cancer.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

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

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

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

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

Benefits

12. If I do monthly breast exams I may find a lump before it is discovered by regular health exams.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

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

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

14. Even though it's a good idea. I find examining / having to examine my breasts an embarrassing thing to do.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

15. Examining my breasts often makes / would make me worry unnecessarily about breast cancer.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

Percieved ** Barriers

16. It is embarrassing for me to do monthly breast exams.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

17. Self breast exams can be painful.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

18. My family would make fun of me if I did self breast exams.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

19. The practice of self breast exams interferes with my activities.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

20. I am afraid I would not be able to do breast self exams.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

** Motivation

21. I eat a well - balanced diet.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

22. I always follow medical orders because I believe they will benefit my state of health.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

23. I frequently do things to improve my health.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

24. I take vitamins.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

25. I search for new information related to my health.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

26. I have the recommended yearly physical exams.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

27. I have the recommended periodic dental exams.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

28. I exercise regularly - at least three times per week.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

** Knowledge

29. The chances of a woman in this country getting breast cancer sometime during her lifetime are

a. Under 10 percent (less than 10 women out of every 100 will someday have it.)

b. 10-25 percent (10 to 25 women out of 100 will someday have it.)

c. 26-50 percent (26 to 50 women out of 100 will someday have it.)

d. 51-75 percent (51 to 75 women out of 100 will someday have it.)

e. Over 75 percent (More than 75 women out of 100 will someday have it.)

f. Have no idea.

30. Most lumps in the breast turn out to be cancer.

a. Yes b. No c. Have no idea

31. On the average, the chances of a woman developing breast cancer begin to increase after she passes which birthday?

a. 20th b. 30th c. 40th d. 50th e. 60th

f. Have no idea

32. A women is more likely to develop breast cancer if she: (check as many as you feel are correct.)

a. is single ___

b. has been married, but has no children ___

c. has been married, and has had children ___

d. has breastfed her children ___

e. has had a hysterectomy ___

f. has relative who have had breast cancer. ___

g. is past menopause ___

h. takes birth control pills ___

i. has been hit in the breast ___

j. have no idea ___

33. A women is likely to lessen her chances of getting breast cancer if she practices the following (check as many as you feel are correct).

a. exercises 3 or more times per week ___

b. doesn't smoke ____

c. drinks alcohol only moderately (3 or less per week) _____

d. eats a diet low in saturated fats ___

e. maintains a health weight for her height and frame ____

f. have no idea ___

34. A women is likely to prevent dying from breast cancer if she (check as many as you feel are correct).

a. finds a breast lump early ___

b. performs breast self exam monthly ___

c. has been instructed by a professional on BSE ___

d. have no idea ___

** Intention

35. I intend to perform breast self exam monthly.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

36. I intend to perform breast self exam this month.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

37. I intend to ask my physician or nurse to instruct me on how to do breast self exam.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

38. I intend to learn more about how breast cancer can effect me.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

** Attitude toward breast self exam and breast cancer

39. My performing BSE monthly is a necessary for continued good health

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

*40. My performing breast self exam is undesirable.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

** Subjective Norm

41. The people who are important to me think that I should perform breast self exam.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

42. My mother believes that breast cancer is a serious disease.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

43. My friends believe that breast cancer is a serious disease.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

44. My boyfriend believes that breast cancer is a serious disease.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

45. My mother believes that I should practice breast self exam monthly.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

** Self - Efficacy

46. Performing breast self exam for me is extremely difficult.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

47. I have no problem performing breast self exam.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

48. My performing breast self exam is an effective way to detect breast cancer.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

** Response Efficacy

49. I believe that performing breast self exam is effective in detecting breast cancer early.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

50. I believe that breast self exam can prevent death from breast cancer.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

** Practice of Breast Self Exam

51. Have you ever performed breast self exam to detect cancer?

Yes ____ No ____

52. How frequently do you perform breast self exam?

Weekly ____

Monthly _____

Yearly _____

Whenever I think about it _____

Other _____

53. What time of the month do you practice breast self exam

Seven days after my last menstrual flow ____

Fourteen days after my last menstrual flow ____

At the beginning of my menstrual flow ____

At the end of my menstrual flow ____

Other _____

54. Based on my current knowledge I am able to detect a breast lump

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

55. Please describe the abnormalities that you look

for_____

56. Where did you learn to do breast self exam?

Physician ___

Pamphlet ____

Nurse ____

Mother ___

Health Education Instructor ____

Clinic ____

Friend ____

Other ____

Does Not Apply ____

57. Do you have a clinical (by your doctor) breast exam at least yearly?

Yes ____ No ____

58. If you answered no to question 59, have you ever heard of breast self exam?

Yes _____ No _____

59. Why do you not practice breast self exam?_____

60. Do You think you would practice BSE if given instruction as to the correct way to perform it? Yes ____ No _____

**Media Questions Source Preferences

61. Which media do you most trust for your health information?

TV News _____

Today Show ____

Good Morning America ____

Campus Radio ___

Magazine ___

Newspaper ____

Newsletters ____

62. Check the media you most often use

TV ____

Radio ____

Magazine _____

Newspaper _____

Newsletters _____

63. What times of day do you most listen to campus radio?

8 am - 12 noon ____

noon -4 p.m. ____

4-8 p.m. ____

8 p.m. -12 midnight ____

64. Where do you live

At home ____

On campus ____

Apartment ____

Dormitory ____

65. What is a good location for a poster, promoting breast cancer awareness, that you feel you would read?

Classrooms Yes ____ No ____

Bulletin Boards in Classroom Buildings Yes ____ No ____

Rest rooms Yes ____ No ____

Olin Health Center Yes ___ No ____

Student Union Womens Lounge Yes ____ No ____

66. Where do you normally turn when you have questions about your health

a. Mother ___

b. Family Physician ____

c. Gynecologist _____

d. Nurse _____

e. Friends _____

f. Faculty ____

g. Other ____

67. To whom do you normally turn for your health care needs?

a. Clinic ___

b. Family Doctor ___

c. Gynecologist ____

d. Nurse ___

e. Other ____

68. If BSE clinics were offered, what is a convenient time during the day for you during Fall semester?

8 am - 12 noon _____

12 noon - 4 p.m. ____

4 p.m. - 8 p.m. ____

69. Please give your address where you can be reached in six months if you are willing to participate in a follow-up.

_____

(This is strictly optional)