Breast Self Examination: Factors Influencing Compliance and the Health Belief Model

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BREAST SELF EXAMINATION:
FACTORS INFLUENCING COMPLIANCE
AND THE HEALTH BELIEF MODEL

by
JEAN MARIE RUSSELL

A Thesis Submitted by the Faculty of the Graduate School of Loyola University of Chicago in Partial Fulfillment of the Requirements of the Degree of Masters of Science in Nursing
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BREAST SELF EXAMINATION: FACTORS INFLUENCING COMPLIANCE AND THE HEALTH BELIEF MODEL

It has been estimated that one in every ten women will develop breast cancer. Breast self examination is a technique that has been shown to detect lesions at an early stage, hence, increasing survival time. However, it has been well documented that the majority of American women do not comply with, or follow the recommendations of the American Cancer Society. The American Cancer Society recommends that breast self examination be done monthly in a specified systematic way.

The Theoretical Framework for this study is the Health Belief Model. This model has been used extensively in past research to determine factors that influence health behavior and health decision making.

The relationship between the frequency of Breast Self Examination and the components of the Health Belief Model is unclear. Studies that have been done, have had inconclusive and often conflicting results.

This study identifies the major factors that predict the frequency of Breast Self Examination, using the Health Belief Model Variables. By determining these influencing and predicting factors, health care personnel are able to gear educational programs to fit the needs of women, based upon these factors.
This study replicates a portion of the study done by Champion, (1987). The sample consists of 121 women who are members of women's organizations. The instrument used was designed by Champion.
ACKNOWLEDGMENTS

Completion of this thesis would not have been possible without the assistance and support of my director and committee members; Esther Matassarin-Jacobs, Judi Jennrich and JoAnn Hungelmann. Special thanks also to Schoba Srinivasan, Alice Tse and the personnel at the Academic Computer Center for their statistical expertise. Special thanks also to Victoria Champion for granting me permission to replicate her study and for assisting with questions when needed. Lastly, a special thanks to my parents and close friends whose continued love and support kept me going through all the trials and tribulations that go along with research.
VITA

The author, Jean Marie Russell, is the daughter of John Joseph Russell and Carole (Seekamp) Russell. She was born on November 29, 1960 in Skokie, Illinois.

Her elementary education was obtained in a Lutheran school in Skokie, Illinois. Her secondary education was completed in June 1978 at Niles East High School in Skokie, Illinois.

In September of 1978, Ms. Russell entered the University of Wisconsin at La Crosse and received her Bachelor of Science Degree in Community Health Education in August, 1982, graduating with Highest Honors.

In January of 1983, Ms. Russell entered the Niehoff School of Nursing at Loyola University of Chicago and received her Bachelor of Science in Nursing in May, 1985, graduating Cum Laude.

Since 1985, Ms. Russell has worked as an oncology nurse and began working on her Masters degree in Nursing with a focus on oncology nursing in June, 1987.


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CHAPTER 1

PROBLEM STATEMENT, PURPOSE AND SIGNIFICANCE

The word "Cancer" evokes many varied responses. Breast cancer is no exception and women feel, behave, believe, and act in different ways when confronted with the topic. Cancer ranks second only to heart disease as a killer of American women. Though lung cancer causes more deaths among women (lung, 50,000/yr; breast, 44,000/yr), the number of new cases of breast cancer exceeds that of lung cancer by almost 3 times (lung, 55,000/yr; breast, 150,000/yr) (American Cancer Society, 1990).

Significance

It has been estimated that one in every ten women (or nine percent of the population) will develop breast cancer at some point in their life. Breast cancer is diagnosed in an estimated 150,000 women every year and approximately 44,000 women die annually from breast cancer (American Cancer Society, 1990). Breast cancer incidence for all stages except in-situ carcinomas has increased by one percent per year between 1973 and 1986 (United States Department of Health and Human Services, 1989).

For women between the ages of 15-34 and 35-54, breast
cancer is the leading oncologic cause of death accounting for approximately 9,000 deaths annually in the United States. For women over 55 years of age, breast cancer is the second leading cause of death and accounts for 31,000 deaths yearly (American Cancer Society, 1990). Breast cancer kills women and there is nothing that science or the medical profession can do to prevent breast cancer at this time.

Primary prevention refers to the steps that can or may be taken to avoid factors that might lead to the development of cancer (American Cancer Society, 1989). Primary prevention can play a key role in preventing many malignancies. Stopping smoking, avoiding occupational hazards and prolonged sun exposure, and even following a recommended diet may help prevent specific cancers from occurring. Unfortunately, there are no identified primary preventions that one can take to avoid breast cancer. Unless we eliminate the threat of all cancer, identify effective primary preventions, or develop a one hundred percent cure rate, breast cancer will continue to take the lives of thousands of American women.

Breast cancer, however, is one type of cancer where early detection and treatment make a significant difference in the length of survival. For a woman diagnosed with Stage 1 breast cancer, when it is still localized, the 5 year survival rate may be as high as ninety percent (American Cancer Society, 1989). If the cancer has spread, however, the 5 year survival rate is sixty percent, or too often, much less.
Since no primary preventions are known for breast cancer, a women's best hope lies with secondary preventions. Secondary prevention refer to those actions that lead to the diagnosis of a cancer or a precursor as early as possible after it had developed (American Cancer Society, 1989). For breast cancer an example of secondary prevention would be monthly breast self examination (BSE).

Breast self examination is a technique used to detect lesions early when they first become palpable. Early detection is one way a woman can help increase her own chances of surviving breast cancer (Morra, 1985).

It would be idealistic to believe that all women do monthly BSE as recommended by the American Cancer Society (ACS). It is, however, astonishing to realize that in reality only about thirty percent of American women perform monthly BSE. In a study conducted by the National Cancer Institute (NCI), ninety-six percent of the women surveyed had heard of BSE, yet only twenty-nine percent performed it monthly (National Cancer Institute, 1979). Blacks and Hispanics are twice as likely as whites to be unaware of the BSE procedure (United States Department of Health and Human Services, 1989). Other research surveys found similar results, demonstrating that only 23-35% of the women studied did monthly BSE (Bennett, 1983; Hallal, 1982; Massay, 1986; Stillman, 1977).

**Purpose**

Breast self examination is easy, painless, takes a
minimal amount of time, and requires no cost or equipment. Therefore, why don't a majority of American women do it? This question is of great concern to nurses. To offer sensitive care in a way that encourages performance of BSE, the nurse needs to understand the variables influencing the practice of breast self examination. The problem is to determine what these influencing variables are.

The purpose of this study is to determine the relationship between the frequency of BSE and the variables of the Health Belief Model. This study is designed to replicate a portion of the research done by Champion (1987).

For clarity, the following are definitions of the variables of the Health Belief Model (Champion, 1985), along with the definitions of other terms that are relevant to this study.

**Definitions**

**Variables of the HBM**

**Susceptibility** - Perceived risk of contracting a specific condition within a specific period of time.

**Seriousness** - Perceived degree of personal threat an individual relates to a specific condition. Threat is defined as perceived harmful consequences of the condition in relation to altering an
individual's physical health, role and social status, and the ability to complete desired tasks.

**Benefits**

- Beliefs a person has regarding the effectiveness of a specific behavior or alternate behavior in preventing or detecting disease, maintaining health, and curing or lessening undesirable consequences of a diseased state.

**Barriers**

- The negative components of an anticipated behavior which would be undertaken for the purpose of preventing or detecting disease, maintaining health, and curing or lessening undesirable consequences of a diseased state. The negative aspects might involve problems such as monetary consequences, pain, changing habits, inconvenience, embarrassment, side effects, or a need for new patterns of behavior.
Health motivation - A state of concern about general health matters which result in positive health activities and willingness to seek and comply with orders which are believed to decrease disease. (Champion, 1985, p. 374.)

Others

Control - The degree to which an individual perceives that a particular reinforcement is due to his/her own behavior, versus the degree to which he/she feels the reinforcement is controlled by outside forces (Hallal, 1982, p.138).

The variable control was not used in Champion's 1985 study, but since it was found to be significant in the research of Hallal (1982), and Alagna & Reddy (1984), Champion decided to use it in her 1987 study (Champion, 1987). Though not directly defined by Champion in her study, the definition by Hallal can be used to enhance clarity.

Breast self examination (BSE) -

Regular (monthly) and systematic examination of the breasts and underarm areas, visually and by palpation, for signs of abnormality (USDHHS, 1984).
Research Questions

The following two research questions will be addressed in this study:

1. Is there a combination of variables within the Health Belief Model that correlates with the frequency of Breast Self Examination?

2. What are the demographic characteristics of the selected sample in relation to breast self examination?
CHAPTER II

THEORETICAL FRAMEWORK

The theoretical framework used for this study, along with many other similar studies, is the Health Belief Model (HBM). This model was originated by Hockbaum, Kegeles, Leventhal and Rosenstock in the early 1950's (Becker, 1974). It was developed to explain and predict health related behaviors. Health behavior, defined by Kasl and Cobb (1966), is "an activity undertaken by a person believing himself to be healthy for the purpose of preventing disease or detecting it in an asymptomatic stage", (p. 246).

The HBM was originally based upon the works of Kurt Lewin in the early 1930's (Rosenstock, Stretcher & Becker, 1988). Lewin believed that behavior was dependent upon two variables; (1) the value of the outcome to the individual and (2) the individual's estimate of the probability that a given action will result in that outcome (Mikhail, 1981). When applying the HBM to BSE; (1) a woman must first believe that self discovery of a breast lesion would be beneficial to her and, (2) that she feel that BSE would/could result in the discovery of a lesion at an early stage.

The health belief model hypothesizes that the motivation
for a health related action is dependent upon the following factors: (Rosenstock, Stretcher & Becker, 1988)

1. The existence of sufficient motivation or health concern to make health issues relevant (health motivation)

2. The belief that one is susceptible to a serious health problem or to the sequelae of that condition, often termed perceived threat. (susceptibility/seriousness)

3. The belief that the specific health action would be beneficial in reducing the threat and at a subjectively acceptable cost. Cost refers to perceived barriers that must be overcome to follow the health recommendations (benefits/barriers). (p.177)

These five variables: susceptibility, seriousness, benefits, barriers and health motivation make up the foundation of the HBM. Intermingled throughout many of the dimensions are modifying and enabling factors that may play a role in influencing behaviors and actions. These factors include: (1) demographic variables, (2) structural variables (ie. side effects), (3) attitudinal variables, (4) interactional variables, and (5) enabling variables (Mikhail, 1981).

The HBM has been used in many studies, (Champion, 1985, 1987, 1989; Hallal, 1982; Howe, 1981; Stillman, 1977), and
has offered insight into why people behave in certain ways. It helps explain why people decide whether or not to perform certain actions that may improve or harm one's health. Identifying the variables involved in health decision making may provide direction for research into ways of modifying these variables in a health conscious way. Encouraging the performance of positive health behavior may be more successful if the variables that influence health behavior decisions are identified.

**Review of Related Studies**

The Health Belief Model has been used in various studies to determine the variable(s) that is/are most significant in determining the frequency of BSE. The findings of these studies are often inconsistent, with some variables showing great significance in some studies, and no significance in others.

Rutledge and Davis (1988), demonstrated that all the variables in the HBM were significant, while most other researchers found a single or just a few of the variables significant.

The variable, susceptibility, was significant in predicting frequency of BSE in some studies (Hallal, 1982; Massay, 1986), but was insignificant in other studies, (Bennett, 1983; Howe, 1981; Stillman, 1977). The variable, barriers, was significant in most studies, (Champion, 1985, 1987, 1988; Rutledge and Davis, 1988; Trotta, 1980).
Knowledge of breast self examination and breast cancer was significant in determining frequency of breast self examination in the studies of Bennett, (1983) and Champion (1987), while Alagna & Reddy (1984) found it not significant when determining frequency but found that it did significantly correlate with proficiency. Health motivation was significant in the studies by Champion (1985,1988), and Hallal (1982). Champion (1989) demonstrated that social influence was not significant when correlated with frequency of breast self examination, yet Rutledge & Davis (1988) found that family encouragement was significant.

Higher educational levels of the respondent correlated with an increased frequency of exam in the studies of Howe (1981), Huguley (1981) and Massay (1986), but was not significant in the studies by Bennett (1983) or Champion (1985,1988).

As one can see, the findings have been quite varied. Many researchers have added other variables in an attempt to determine the frequency of BSE. Locus of control, confidence, social influence, method of BSE instruction and physician interest in monthly BSE compliance are a few of the new variables (Calentano & Holtzman, 1983; Champion 1989; Lauver & Angerame, 1988; Redeker, 1989; Rutledge & Davis, 1988).

In many of the previous studies, little documentation was found regarding the reliability and validity of the
instruments used. The inconclusive findings, therefore, may have been related to methodological problems.

**Champion's Studies**

In 1985 Champion used the variables of susceptibility, seriousness, benefits, barriers and health motivation to determine BSE frequency. The practice of BSE was measured by a single question which asked the number of times BSE was performed in monthly increments.

In 1987, Champion studied the relationship between frequency of BSE and the HBM with the addition of two additional variables, control and knowledge. Both control and knowledge had been used as variables in relationship to performance of BSE in other studies and were found to be significant (Hallal, 1982; Howe, 1981; NCI, 1981). Champion's sample consisted of 585 women who were approached while waiting in an outpatient clinic of a large university hospital. The instrument was modified slightly from her previous study to enhance clarity. Champion established content validity by submitting the items to a panel of expert judges. Construct validity was established by analyzing all items with principal component factor analysis and varimax rotation. Internal consistency reliabilities using Cronbach's alpha ranged from .63 to .76. Test-retest reliabilities utilizing Pearson r ranged from .47 to .62 (Champion, 1987).

**Champion's Results**

The results of Champion's two studies (1985,1987), were
quite similar. In 1985 Champion found that the five variables she used accounted for 26% of the variance in BSE performance. Upon examination of each variable separately it was found that barriers accounted for the largest portion of the variance (23%) with the dependent variable being frequency of BSE. The only other variable showing any significance was health motivation which accounted for approximately 2% of the variance. The variables: susceptibility, benefits and seriousness did not add significantly to the frequency of BSE (Champion, 1985).

Champion's 1987 study demonstrated that the seven variables accounted for 28% of the variance ($R^2=.53$), with barriers accounting for 22% and knowledge accounting for 4%. The remaining variables added little to the total variance (Champion, 1987).

Demographic variables were analyzed in both of Champion's studies and were found to have little influence upon the frequency of BSE. Knowledge of BSE and breast cancer did not influence frequency of BSE in her 1985 study, yet an increase in years of schooling was associated with an increase in frequency of performance in her 1987 study (Champion, 1985, 1987).

This study replicates a portion of the study done by Champion (1987), but with a new population. The present study will examine the relationship between frequency of BSE and variables of the HBM in a population of healthy females.
The revised instrument from Champion's recent work (1987) will be used (Appendix A).
CHAPTER III

METHODOLOGY

Design

The design of the present study is correlational. According to Woods and Mitchell (1988), a correlational survey is a research design that relates multiple variables measured at a single time point in a sample from a designated population. The variables are related to one another but not in a causal way. Instead, the analytical strategy emphasizes exploration of relationships as associations (p.151)

Sample

The sample consisted of 132 women who were members of women's organizations and clubs in a variety of social, recreational, service and religious settings. Groups of women were also sampled in the workplace (ie. schools and businesses). Subjects had to be able to read and respond using the English language.

Variables

Seven variables were used in this study. The six independent variables were: susceptibility, seriousness, benefits, barriers, control and health motivation. These six variables are the foundation of the Health Belief Model.
The dependent variable in this study is frequency of breast self examination. The goal of this study is to determine the relationship between the independent variables and the frequency of breast self examination.

Instrument

The instrument used for this study is entitled, "Health Belief Model Scale", developed by Champion in 1987. It is a revised version of Champion's 1985 instrument.

The first part of the instrument consists of 35 statements which measure the six independent variables, see Table 1. All 35 statements were placed on a five point Likert scale ranging from strongly agree equal to 5, to strongly disagree equal to 1.

Six multiple choice questions were used to measure the participants knowledge of breast cancer and breast self examination. One question measured the dependent variable (frequency of breast self exam). Participants were asked how often they performed breast self examination. The choices were: - more than once a month
- once a month
- every other month
- every 3-4 months
- every 5-6 months
- less than once every 6 months

Nineteen other questions addressed demographic data and included questions about the participants own experience with
### Table 1

**Examples of Statements within the Instrument Measuring the Independent Variables**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SUSCEPTIBILITY:</strong></td>
<td>I feel I will get breast cancer in the future.</td>
</tr>
<tr>
<td></td>
<td>My chances of getting breast cancer are great.</td>
</tr>
<tr>
<td><strong>SERIOUSNESS:</strong></td>
<td>Breast cancer would endanger my marriage (relationship).</td>
</tr>
<tr>
<td></td>
<td>If I had breast cancer my whole life would change.</td>
</tr>
<tr>
<td><strong>BENEFITS:</strong></td>
<td>Discovering lumps early would increase my chance of survival if I had breast cancer.</td>
</tr>
<tr>
<td></td>
<td>I have a lot to gain by doing breast self exam.</td>
</tr>
<tr>
<td><strong>BARRIERS:</strong></td>
<td>I cannot remember to do breast self examination.</td>
</tr>
<tr>
<td></td>
<td>I am afraid of finding a lump when I do breast self exam.</td>
</tr>
<tr>
<td><strong>CONTROL:</strong></td>
<td>I can control the effects of breast cancer.</td>
</tr>
<tr>
<td></td>
<td>If I get breast cancer, I can do a lot myself to control what happens.</td>
</tr>
<tr>
<td><strong>HEALTH MOTIVATION:</strong></td>
<td>I search for new information related to my health.</td>
</tr>
<tr>
<td></td>
<td>I have yearly physical exams in addition to visits related to illness.</td>
</tr>
</tbody>
</table>

(See Appendix A)
breast lumps (or that of a friend), and where, how and from whom they had learned breast self exam, if they knew about it. The answers for these nineteen questions were primarily multiple choice or yes/no, with six questions being fill in the blank.

Data Collection

The investigator was the sole distributor and collector of the data. Data collection took place in the northern and western suburbs of Chicago. Both formal and informal groups of women were contacted. In the formal groups, the investigator contacted the director or program manager of each of the groups of women. The purpose and details of the study were explained. Samples of the questionnaire were offered to the contact person, but no one requested to see a copy prior to the collection date. Upon approval by the contact person, the date, time and location for administration of the questionnaires was determined.

Prior to collecting data, consent forms (see Appendix B), were submitted to the Loyola Institutional Review Board, deemed necessary and approved. The ethical considerations were minimal since no real risk was involved.

For the groups of women who were gathered as part of a club meeting, the questionnaires were distributed at the start of the meeting. The investigator explained who she was and what she was doing. The purpose and significance of the study was also discussed. The consent form itself was
explained as well as the actual questionnaire. Confidentiality was stressed. Pencils were provided. Members who did not wish to participate were asked to simply return the questionnaire, and were not coerced in any way. Members were told that they could or might withdraw from the study at any time without influencing their involvement in their club or organization. Anonymity was stressed in that no names would be reported, and confidentiality was explained in that the findings would be reported as grouped data.

The questionnaire took approximately 20 minutes to complete. The questionnaires were collected separately from the consents so that participants knew that there would be no way of determining who filled out which questionnaire. After all the questionnaires were collected, informational pamphlets about breast cancer and breast self examination were left on the table near the exit door.

In the groups of women who met outside of formal groups, a similar type of data collection process took place. Questionnaires and consents were collected separately. Informational pamphlets were given out, along with some interpersonal discussion.

The risks involved in participating in this study were minimal. Psychologically, requesting that a participant think about a disease such as cancer and their own personal risk of developing cancer, may cause some discomfort. However, with the desire to educate the public properly and
meaningfully being the ultimate purpose of this type of study, these uncomfortable issues cannot be hidden or unacknowledged.

Because the idea of developing cancer evokes such a varied response among people, seven different pamphlets regarding breast cancer and breast self exam were distributed after the questionnaires were completed (see Appendix C). Telephone numbers to call for further information were contained in these pamphlets as resources. Two hundred copies of each of the seven different pamphlets were obtained from the National Cancer Institute and distributed for this purpose.

All contact persons received thank you letters and many of them asked for the results of the study upon its completion.

Data was collected in this manner hoping that a "captive" audience would enhance return rates. One hundred fifty questionnaires were actually given out, with 132 actual respondents, for a return rate of 88%. Even the 12% of those who did not wish to participate were given the opportunity to ask questions and receive written information regarding breast cancer and breast self examination. Being present to answer questions that arose while participants were filling out the survey also enhanced accuracy of the responses.

Limitations

Results of this study were limited by the demographics
of the sample. The sample itself was primarily a convenience sample. A probability sample could be used so that the findings might be generalized.

In contacting formal organizations, many declined to participate because their program schedule and guest speakers were decided upon far in advance. It is also possible that the presence of the investigator, though advantageous at times, created an indirect means of coercing people to participate.

Other limitations had to do with the consent form and the questionnaire. The consent form was deemed necessary by the Loyola Institutional Review Board and consisted of two pages of information. It seemed to create a sense of mistrust and fear among many of the older women. Many women decided that "they weren't going to sign anything", and therefore could not be included in the study.

The questionnaire itself, used with permission of Champion (1987), also had limitations. Because many of the questions measured the same construct/variable, the women often felt confused. Many of the older women were not familiar with the Likert type answer scale. Many older women refused to furnish their ages. Six questions were designed to measure one's knowledge of BSE, yet there was no option for "Don't Know", thus can the investigator assume that a skipped question meant that the participant didn't know, or was it a mistake that the question was skipped? An answer
of "Not Applicable" was not an option in many questions where it might have been appropriate, for example, the question regarding religious affiliation could have used a "Not Applicable" or "None" response in many cases. The length of the questionnaire may have also been a limiting factor. The total length of the questionnaire was six pages, and it seemed that the greatest percentage of unanswered questions was near the end. Many of the older women, decided to stop answering the questions by the third or fourth page. In the formal groups, many participants, knowing that their scheduled meeting was to follow, may not have taken as much time as they would have liked.
CHAPTER IV

RESULTS AND DISCUSSION

Pilot

Prior to analyzing the sampled data, a pilot test was performed on a sample of ten graduate nursing students and faculty members who were familiar with the Health Belief Model variables. Each member of the pilot sample was asked to write down which of the six health belief model variables (susceptibility, seriousness, benefits, barriers, health motivation or control), each of the first 35 questions of the instrument measured.

The results of the pilot demonstrated that 26 of the 35 questions had at least a 70% agreement among the pilot members. The pilot was done to insure construct validity.

All data analysis done on the actual sample was done using the Statistical Package for the Social Sciences. Of the 132 women surveyed, 121 of these were white women. To avoid skewing the results and making inappropriate generalizations the sample was therefore changed to include only the white women. The following results, therefore, apply only to the 121 white women.
Factor Analysis

In Champion's initial study, (1987), the first 35 questions of the instrument measured one of the six HBM variables, (susceptibility, seriousness, benefits, barriers, control, and health motivation). Her factor analysis resulted in six factors being identified.

Factor analysis is intended to give an investigator information about the extent to which a set of items measures the same underlying variable, or a dimension of that variable. This analysis procedure can be used to assess the extent to which the individual items on a scale truly cluster together (converge) around one or more dimensions. Items designed to measure the same dimensions should load on the same factor, while those designed to measure other dimensions should load on other factors (Woods, 1988).

In this study, factor analysis, using varimax rotation resulted in four factors (variables), see Table 2. The first thirty-five questions were better grouped into four factors, based upon how the questions loaded on those factors. The correlation matrix of the thirty-five questions was examined to be sure that correlations were above .24, but did not exceed .99. The range of correlations for the first thirty-five items was from .24 to .69. A total of 37.3% of the variance was explained by the four factors. These four factors had anywhere from 6 to 12 items (questions) loading on them. These four factors were then labeled,
Table 2

**Grouping of 35 items on 4 factors according to strength of loading by factor analysis**

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor</th>
<th>FACTOR 1 (SUSCEPTIBILITY)</th>
<th>Factor</th>
<th>II</th>
</tr>
</thead>
<tbody>
<tr>
<td>13 Feel I will get breast cancer</td>
<td>.69</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19 Good possibility I will get CA</td>
<td>.69</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29 Chances of getting CA are good</td>
<td>.63</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 Problems from CA last long time</td>
<td>.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 Feelings about myself change</td>
<td>.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Worry a lot about getting CA</td>
<td>.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 Cannot remember to do BSE</td>
<td>.47</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 Too busy to do BSE</td>
<td>.45</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 Afraid of finding a lump</td>
<td>.43</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Embarrassing to do BSE</td>
<td>.43</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 Think about CA-heart beats fast</td>
<td>.42</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Physical health may lead to CA</td>
<td>.42</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26 Cannot find lump by BSE</td>
<td>.39</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14 Afraid to think about CA</td>
<td>.37</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor</th>
<th>FACTOR II (HEALTH MOTIVATION AND BARRIERS)</th>
<th>Factor</th>
<th>II</th>
</tr>
</thead>
<tbody>
<tr>
<td>28 BSE is something I will do</td>
<td>.62</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 BSE can help find lumps</td>
<td>.55</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Thought of CA scares me</td>
<td>.51</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21 Lot to gain by doing BSE</td>
<td>.51</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23 Frequently improve my health</td>
<td>.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 Have yearly physicals</td>
<td>.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32 Monthly exam will help me find</td>
<td>.40</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>34 Ability to discover is the same</td>
<td>.34</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31 Unpleasant to touch my breasts</td>
<td>-.28</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 2 -continues

#### Factor III
**(Seriousness)**

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor III</th>
</tr>
</thead>
<tbody>
<tr>
<td>25. Cancer would change my life</td>
<td>.68</td>
</tr>
<tr>
<td>5. Breast CA endangers my life</td>
<td>.64</td>
</tr>
<tr>
<td>17. Search for new info related to health</td>
<td>.35</td>
</tr>
<tr>
<td>35. Would not be anxious if I BSE</td>
<td>-.34</td>
</tr>
<tr>
<td>24. Breast CA endangers my marriage</td>
<td>.33</td>
</tr>
<tr>
<td>33. I exercise 3 times a week</td>
<td>.28</td>
</tr>
</tbody>
</table>

#### Factor IV
**(Control and Benefits)**

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>18. I can do a lot for survival</td>
<td>.56</td>
</tr>
<tr>
<td>6. If CA, can do a lot to control</td>
<td>.50</td>
</tr>
<tr>
<td>12. Can control the effects of CA</td>
<td>.46</td>
</tr>
<tr>
<td>27. Eat well balanced diet</td>
<td>-.38</td>
</tr>
<tr>
<td>3. Find early lumps increases survival</td>
<td>.36</td>
</tr>
<tr>
<td>30. Self exam prevents future CA</td>
<td>.24</td>
</tr>
</tbody>
</table>
Susceptibility, Health Motivation and Barriers, Seriousness, and Control and Benefits. Conceptually these labels made more sense because some of Champion's original six factors were so closely related that by grouping them together, even stronger correlations resulted.

These four factors compared favorably with Champion's original six. Factor I, labeled, Susceptibility, were those items dealing with a woman's belief that she was at risk for developing breast cancer. Factor II, was labeled Health Motivation and Barriers. This combination of variables fit conceptually together in that a person who is highly health motivated perceives fewer barriers to her actions. Items loading on this factor dealt with a woman's general health beliefs and actions, and the types of deterrents to these beliefs or actions.

Items loading on factor III, labeled Seriousness, were those items dealing with a woman's belief that if she were to develop breast cancer, dangerous and grave consequences could occur, affecting her entire life. Factor IV was labeled Control and Benefits. This combination of variables can also be reasoned conceptually. For example, a woman who feels that she is in control of outcomes, as well as her actions, will probably see benefits to this control. Items loading on these factors dealt with a woman's belief that her own actions or beliefs would effect her future, and that certain actions or beliefs would have advantageous outcomes.
A Pearson correlational procedure was done to compare these new 4 variables with Champion's original 6, (see Table 3). The results demonstrated that Factor 1 (susceptibility) correlated with Champions variable of susceptibility with a .91 (p<.05). Factor II (health motivation and barriers),

Table 3

<table>
<thead>
<tr>
<th>Correlation of Champion's 6 variables to Russell's 4 variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Russell)</td>
</tr>
<tr>
<td>Susceptibility</td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td>Susceptibility</td>
</tr>
<tr>
<td>Seriousness</td>
</tr>
<tr>
<td>Benefits</td>
</tr>
<tr>
<td>Barriers</td>
</tr>
<tr>
<td>Health Motivation</td>
</tr>
<tr>
<td>Control</td>
</tr>
</tbody>
</table>

(Champion)
correlated with two of Champion's variables, health motivation at .64 and barriers with a -.69, (p<.05). Factor III (seriousness), correlated with Champion's variable of seriousness at .86 (p<.05), and Factor IV (benefits and control) correlated with Champion's last two variables of benefits at .57 and control at .64 (p<.05).

In performing a Pearson correlation on each of the 4 factors in relation to frequency of breast self exam, see Table 4, the variable combination of health motivation and barriers correlated moderately at .48 (p<.05), and the variable combination of benefits and control had a weak correlation of .17 (p<.05). In summary, the four factor analysis on this particular sample, compares favorably with the six factor analysis reported by Champion (1987). The labels of the four factors include the labels given to the original six factors of Champion.

**Multiple Regression**

The researcher uses multiple regression to determine what variables contribute to the explanation of the dependent variable (Wood & Haber, 1986); in this case, frequency of BSE. The purpose of multiple regression is to determine which factors explain the greatest variance.

In this study, factor II (health motivation and barriers) and factor IV (control and benefits) are the most significant. Factors I (susceptibility) and III (seriousness) add little to the variance and for this reason
Table 4

Correlation of Russell's 4 Factors with the Dependent Variable

(4 Variables Determined by Factor Analysis)

<table>
<thead>
<tr>
<th>Susceptibility</th>
<th>Health</th>
<th>Seriousness</th>
<th>Benefits and Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivation and Barriers</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Frequency of Breast Self Exam

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>.05</td>
<td>.48</td>
<td>-.03</td>
<td>.17</td>
</tr>
</tbody>
</table>

(Dependent Variable)
only factors II and IV are shown in Table 5. Table 5 shows the significant data that can be obtained using multiple regression analysis. Beginning with factor II, (health motivation and barriers), the R squared is .23087. This demonstrates that approximately 23% of the variance in breast self exam is explained by factor II. This also demonstrates that 77% of the variance is still unexplained. Subtracting the R squared from 1 leaves the 77% of unexplained variance.

Factor IV, (control and benefits), was entered next into the regression with significant data shown in Table 5. The multiple R squared of .26250 indicates that 26% of the variance of BSE frequency can be predicted by factors IV and II together, so only approximately 3% of the variance could be explained by factor IV alone. The significantly higher beta weight of factor II also demonstrates that factor II is better able to predict frequency of BSE than factor IV. Factor I (susceptibility) and factor III (seriousness), not included in the table due to low significance, have little effect upon the dependent variable (frequency of BSE).

Table 5

Multiple Regression Analysis of Factors II and IV

<table>
<thead>
<tr>
<th>Factor</th>
<th>R2</th>
<th>F</th>
<th>Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>II</td>
<td>.23</td>
<td>28.8</td>
<td>.48</td>
</tr>
<tr>
<td>IV</td>
<td>.26</td>
<td>16.9</td>
<td>.17</td>
</tr>
</tbody>
</table>
Descriptive Data

Of the sample surveyed (N=121), 31% examined their breasts monthly. An additional 11% examined their breasts more than once a month (see Table 6). These findings are quite similar to the results of Champion's 1987 study who found that 33% of those sampled examined their breasts once a month, with 11% performing BSE more frequently.

Table 6

Percentage of subjects performing BSE at various frequencies

<table>
<thead>
<tr>
<th>Frequency of BSE</th>
<th>n</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than once a month</td>
<td>13</td>
<td>11%</td>
</tr>
<tr>
<td>Every month</td>
<td>37</td>
<td>31%</td>
</tr>
<tr>
<td>Every other month</td>
<td>11</td>
<td>9%</td>
</tr>
<tr>
<td>Every 3-4 months</td>
<td>24</td>
<td>20%</td>
</tr>
<tr>
<td>Every 5-6 months</td>
<td>7</td>
<td>6%</td>
</tr>
<tr>
<td>Less than every 6 months</td>
<td>20</td>
<td>16%</td>
</tr>
<tr>
<td>(No answer given)</td>
<td>9</td>
<td>7%</td>
</tr>
<tr>
<td></td>
<td>121</td>
<td>100%</td>
</tr>
</tbody>
</table>
The current results also demonstrated that of the 121 women sampled, 97.5% of the women had heard of BSE, 85.1% had been taught in some way how to perform BSE and 91% claimed they knew how to perform BSE.

Of the women who were taught how to perform BSE, 22.3% were taught by a physician, 16.5% read a pamphlet or book, and 43.8% were taught in a variety of ways, see Table 7. Only 5% stated they were taught by a nurse; however, some may have been taught by a nurse in addition to other ways, and would therefore have answered, "Taught in several ways".

Table 7

<table>
<thead>
<tr>
<th>Method of Instruction</th>
<th>n</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read a pamphlet or book</td>
<td>20</td>
<td>16.5%</td>
</tr>
<tr>
<td>Taught by a nurse</td>
<td>6</td>
<td>5.0%</td>
</tr>
<tr>
<td>Taught by a physician</td>
<td>27</td>
<td>22.3%</td>
</tr>
<tr>
<td>Shown a film</td>
<td>4</td>
<td>3.4%</td>
</tr>
<tr>
<td>Radio or TV</td>
<td>1</td>
<td>0.8%</td>
</tr>
<tr>
<td>Taught in several ways</td>
<td>53</td>
<td>43.8%</td>
</tr>
<tr>
<td>No answer given</td>
<td>10</td>
<td>8.3%</td>
</tr>
<tr>
<td></td>
<td>121</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
Of those who performed BSE regardless of frequency, only 40% knew the correct time of the month to perform it. Only 62% of the women felt that a woman should check her breasts while in the shower, and 72% felt correctly, that a woman should look at her breasts in the mirror with her hands held above her head (see Table 8).

Of the 121 woman sampled, 17% were within the age group of 41-50. This age group is at highest risk for breast cancer, yet only 14% of these women practiced monthly BSE. This percentage is the smallest percentage when comparing all age groups. In the age group from 51-60, which is the second highest risk group, 52% of the women stated they performed monthly BSE.

Of the women that practiced BSE monthly, surprisingly there was an equal percentage of women who had been treated for breast lumps, and those who had never been treated for breast lumps. Further demographic information on the 121 women sampled can be found on Table 9.

Further analysis could be done on the myriad of data that was obtained in this study, but taking the analysis that was done, many interesting results were obtained.
Table 8

Frequencies and Percentages of Responses to a Sample of Questions Intended to Measure a Participant's Knowledge

(* denotes correct answer)

<table>
<thead>
<tr>
<th>Question</th>
<th>N</th>
<th>Answers</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the best time during the menstrual cycle to examine one's breasts</td>
<td>121</td>
<td>A. One week before a period</td>
<td>18</td>
<td>15%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B. During the period</td>
<td>6</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*C. 1 week after a period</td>
<td>48</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D. 2 weeks after a period</td>
<td>22</td>
<td>18%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No answer/didn't know?</td>
<td>27</td>
<td>22%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>A woman should check her breasts while in the shower?</td>
<td>121</td>
<td>A. False, she might miss lumps</td>
<td>33</td>
<td>27%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*B. True, lumps may be easier to find</td>
<td>75</td>
<td>62%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No answer/didn't know?</td>
<td>13</td>
<td>11%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>A woman should look at her breasts in a mirror with her hands above her head?</td>
<td>121</td>
<td>*A. True, looking at the breast is important</td>
<td>87</td>
<td>72%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B. False, looks can be deceiving</td>
<td>23</td>
<td>19%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No answer/didn't know?</td>
<td>11</td>
<td>9%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>
Table 9

Frequencies and Percentages on Demographic Data: Age, Marital Status, Religion, and Education

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>121</td>
<td>17-30 = 42</td>
<td>35%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>31-40 = 23</td>
<td>19%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>41-50 = 21</td>
<td>17%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-60 = 19</td>
<td>16%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>60+ = 16</td>
<td>13%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td>121</td>
<td>married = 67</td>
<td>55%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>divorced</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>widowed</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>or single = 19</td>
<td>16%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>no answer = 35</td>
<td>29%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Religion</td>
<td>121</td>
<td>Jewish = 12</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Catholic = 52</td>
<td>43%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Protestant = 22</td>
<td>18%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>other = 8</td>
<td>6%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>no answer = 27</td>
<td>23%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>121</td>
<td>up to 12 = 33</td>
<td>27%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13-15 = 24</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>16 = 29</td>
<td>24%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>over 16 = 32</td>
<td>26%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>no answer = 3</td>
<td>3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>
Discussion of Results

This study identified many interesting findings. Initially, the investigator expected that the factor analysis would yield six factors (variables). It was found, however, that the four factor analysis provided the best conceptual fit for this sample. Of these four variables, two of them were found to be a combination of two of Champion's original Health Belief Model variables (1987).

Creating questions that will measure abstract variables is not an easy task. Even the pilot sample did not have 100% agreement on every question regarding which variable the question intended to measure. For example, does, "eating three balanced meals a day" measure one's health motivation or one's control? People are bound to view this question differently. This fact does not mean that six variables are wrong and four variables are right, or vice versa. It merely shows that determining the factors actually influencing behavior is very difficult, and may vary from sample to sample.

This study demonstrates that there is no definite boundary between determining one's high health motivation and one seeing few barriers to a health behavior. Likewise, there is a gray area between determining one's idea of having control over outcomes and one's perception of beneficial outcomes of actions taken (benefits).

In Champion's study, (1987), barriers was found to be the most significant variable in predicting BSE frequency.
In this study the combination of health motivation and barriers was found to be the most significant. In both studies, neither perceived susceptibility nor seriousness were found to be significant variables. These are important results to remember and may help guide our efforts to educate women.

This study, as well as Champion's, demonstrates that not enough women practice monthly BSE. Champion found that 33% of those sampled performed monthly BSE. This study demonstrated that 31% of those sampled performed monthly BSE. This study also demonstrates that the age group at highest risk for breast cancer, practices BSE the least. The fact that the highest risk age group reported the lowest frequency of BSE is an important, but distressing finding.

The assumption that women who have been treated for breast lumps make up the majority of monthly examiners, has also been refuted by this study. In actuality, of the monthly examiners, there is an equal number of women who have had breast lumps and those who have not.

In conclusion, the findings of this study are quite similar to those of previous investigator. Sadly, BSE is not being done monthly by a majority of women, not being done at the right time of the month by many women, not being done properly by a few of the women, and seldom being done at all by those at greatest risk for breast cancer.
CONCLUSIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

Breast self examination will not prevent or eliminate breast cancer. Early detection, however, does make a significant difference in the length of survival a woman may obtain. In dealing with oncology patients, one cannot help but realize the importance a few extra months or years can mean to someone afflicted with cancer. Early detection of a lump in the breast through BSE can help a woman attain perhaps 10 or 20 additional years, perhaps even cure (ACS, 1989).

Determining what influences health behavior and what variables influence health decision making is not an easy task. Theories, such as the Health Belief Model, attempt to determine these influencing factors. The HBM has been used in many areas of health research. Even though change and additions may have been made to the original model, many underlying themes are still very pertinent.

The variable, barriers, has been found to be significant in many studies, and has been found to be a significant factor in determining frequency of breast self exam. Further research needs to not only focus on specific barriers, but
must determine ways to overcome these barriers. If a woman simply forgets to do BSE, what can be done to remind her, a sign in the shower, or a reminder card from her health care provider's office?

Women must be taught BSE, not just how often, but the actual technique and what to look and feel for. Monthly breast self exam is so much more effective when done properly and with confidence.

Further research is needed to address the limitations of this study and previous studies. Questions need to be developed that more clearly measure health attitudes, beliefs and variables, and that can be used with consistency to study varying populations. Populations from various ethnic and religious backgrounds need to be sampled extensively.

Nurses themselves come in contact with hundreds of women, and are in an excellent position to assess their patients knowledge and practice of BSE. If each nurse in a major medical center (estimate 500 nurses), taught BSE to two women each month, over 10,000 women could be taught annually! This is just an estimate for one institution. Through time and research a major impact could be made on women at risk for breast cancer, so that they may get that extra survival time they so desire and deserve.
REFERENCES


I am interested in how you feel about each of the following statements. Circle the number which best represents your feeling of agreement with the statement. There are no right or wrong answers. By filling out this questionnaire you agree to participate in this study.

5= strongly agree  
4= agree  
3= neutral  
2= disagree  
1= strongly disagree

STATEMENTS

1. I worry a lot about getting breast cancer......1 2 3 4 5
2. The thought of breast cancer scares me............1 2 3 4 5
3. Discovering lumps early would increase my chances of survival if I had breast cancer.....1 2 3 4 5
4. It is embarrassing for me to do monthly breast exams.........................1 2 3 4 5
5. Breast cancer would endanger my life..........1 2 3 4 5
6. If I get breast cancer I can do a lot myself to control what happens....................1 2 3 4 5
7. My physical health makes it more likely that I will get breast cancer...................1 2 3 4 5
8. My feelings about myself would change if I got breast cancer.........................1 2 3 4 5
9. When I think about breast cancer my heart beats faster..............................1 2 3 4 5
10. I am too busy to do self breast exam.............1 2 3 4 5
5=strongly agree 
4=agree 
3=neutral 
2=disagree 
1=strongly disagree

11. I have yearly physical exams in addition to visits related to illness.......................1 2 3 4 5

12. I can control the effects of breast cancer....1 2 3 4 5

13. I feel that I will get breast cancer in the near future.........................1 2 3 4 5

14. I am afraid to even think about breast cancer.1 2 3 4 5

15. Self breast exams can help me find lumps in my breast.................................1 2 3 4 5

16. I am afraid of finding a lumps when I do breast self exam..............................1 2 3 4 5

17. I search for new information related to my health......................................1 2 3 4 5

18. I can do a lot to improve my survival rate for breast cancer.........................1 2 3 4 5

19. There is a good possibility that I will get breast cancer.................................1 2 3 4 5

20. Problems I would experience from breast cancer would last a long time................1 2 3 4 5

21. I have a lot to gain by doing breast self exams......................................1 2 3 4 5

22. I cannot remember to do breast self exam.............................................1 2 3 4 5

23. I frequently do things to improve my health.............................................1 2 3 4 5

24. Breast cancer would endanger my marriage (or significant relationship).............1 2 3 4 5

25. If I had breast cancer my whole life would change.....................................1 2 3 4 5

26. I do not think I could find a lump in my breast with breast self exam...............1 2 3 4 5

27. I eat a well balanced diet.................................................................1 2 3 4 5
28. Self breast exam is something I intend to do..........................1 2 3 4 5

29. My chances of getting breast cancer are great........................1 2 3 4 5

30. Doing self breast exam prevents future problems for me................1 2 3 4 5

31. It is unpleasant to touch my breasts..............1 2 3 4 5

32. If I do monthly breast exams I may find a lump before it is discovered by a nurse or a doctor.................................1 2 3 4 5

33. I exercise at least 3 times a week..............1 2 3 4 5

34. My ability to discover breast lumps is the same each time...............1 2 3 4 5

35. I would not be so anxious about breast cancer if I did self breast exam.............1 2 3 4 5

I would like some information about you. Please circle the most appropriate answer or fill in the blank. Feel free to ask any questions.

36. How old are you?______

37. Are you
   A. Black
   B. White
   C. Oriental
   D. Indian
   E. Other

38. What is your marital status
   A. Married
   B. Divorced
   C. Widow
   D. Single
   E. Other
39. Do you regularly (at least 2 times a month) practice any religion?
   A. Jewish
   B. Catholic
   C. Protestant
   D. Other

40. How many years of school have you completed?
   A. under 8
   B. 9
   C. 10
   D. 11
   E. 12
   F. 13
   G. 14
   H. 15
   I. 16
   J. over 16

41. What is your occupation__________________________

42. If married, what is the occupation of your spouse_______

43. If living with your parents, what is the occupation of your father__________________________

44. Have you ever been treated for breast disease or lumps in the breast?
   A. yes
   B. no

45. Have any persons close to you been treated for a breast disease?
   A. yes
   B. no

46. What type of breast disease did they have?
   Circle appropriate answer: Benign/Malignant/don't know

47. What type of treatment did they have? Circle answers surgery / radiation/ chemotherapy / other/ don't know

48. Was the treatment effective?
   A. yes
   B. no

49. Have you ever heard of breast self exam?
   A. yes
   B. no
50. Have you ever been taught breast self exam?
   A. yes
   B. no

51. Do you know how to do self breast exam?
   A. yes
   B. no

52. If you have been taught breast self exam, how was it taught?
   A. read a pamphlet or book
   B. taught by a nurse
   C. taught by a doctor
   D. shown a film
   E. radio or tv
   F. taught in several ways

53. If you were taught to do breast self exam, did you practice the exam with your instructor?
   A. yes
   B. no

54. If you were taught to do self breast exam, how was it done
   A. individually
   B. in a group

55. If you do self breast exam, how often do you examine your breasts?
   A. more than once a month
   B. every month
   C. every other month
   D. every 3-4 months
   E. every 5-6 months
   F. less than once every 6 months

56. What is the best time during the menstrual cycle to examine your breasts?
   A. one week before your period
   B. during your period
   D. one week after your period
   E. two weeks after your period

57. A woman should check her breasts while in the shower?
   A. false, she might miss lumps
   B. true, lumps may be easier to find in the shower

58. Are a woman's right and left breast the same size?
   A. yes, if the woman is fully developed, they're the same size
   B. no, variation in size is normal
59. Under what circumstances should a woman see her doctor at once?
   A. if there is a firm ridge in the lower curve of her breast
   B. if she accidentally hits her breast
   C. if a discharge from the nipple is noticed (does not include milk)

60. Which of the following statements is true?
   A. a breast should be examined while lying on the side
   B. breasts should be examined twice a month
   C. breasts should be examined in a clockwise manner circling at least 3 times

61. A woman should look at her breasts in the mirror with her hands above her head?
   A. true, looking at the breast is important
   B. false, looks can be deceiving

Thank you for taking the time to answer this questionnaire
APPENDIX B
LOYOLA UNIVERSITY OF CHICAGO
GRADUATE SCHOOL OF NURSING

CONSENT INFORMATION

PROJECT TITLE: Breast self examination: Factors influencing compliance and the Health Belief Model

PRINCIPAL INVESTIGATOR: Jean M. Russell

SUBJECT INFORMATION:

As a graduate student in the School of Nursing at Loyola University, I have chosen to write a thesis as part of my graduate study. My thesis is a study to determine what factors influence whether or not a woman performs breast self exam.

If you decide to participate, you will be asked to fill out a questionnaire. This questionnaire will take between 10-15 minutes. It is hoped that all questions will be answered honestly. When you have finished the questionnaire, some information about breast self exam will be provided to you.

RISKS AND BENEFITS

The risks involved in participating in this study are minimal. I do ask that you take some time in answering the questions to your best ability. There is no cost to you except for your time.

There are no immediate benefits to you from participating in this study. The information we will be learning from your answers will be used to improve the care of women in the future. We hope to be able to determine what the needs are of women, like yourselves, are about breast self examination.

If you chose not to participate in this study, you will not be coerced in any way, and you may simply return the consent form and questionnaire back to me.

CONFIDENTIALITY

Case records from this study will be maintained in a confidential manner and you will not be identified in any way. You do consent to the publication of any data that may result from this investigation. You do understand that authorized personnel may review the records relating to this project at any time. You may stop filling out your questionnaire at any time.
CONSENT FORM

I have fully explained to the under-signed participant the nature and purpose of this study and the risks that are involved. I have answered and will answer all questions to the best of my ability.

(signature of principal investigator)

I have been fully informed of the above described study with its possible risks and benefits. I give permission for my participation in this study. I know that Jean M. Russell will be available to answer any questions that I may have. If at any time I feel that my questions have not been adequately answered, I may request to speak with a member of the Medical Center Institutional Review Board. I understand that I am free to withdraw this consent and discontinue participation in this project at any time without prejudice to my medical care or club involvement.

(date) (signature of participant)
INFORMATIONAL PAMPHLETS GIVEN TO PARTICIPANTS:

"Breast Self Examination"

"Breast Biopsy: What You Should Know"

"Breast Cancer: Understanding Treatment Options"

"Mastectomy: A Treatment for Breast Cancer"

"Breast Reconstruction: A Matter of Choice"

"Radiation Therapy: A Treatment for Early Stage Breast Cancer"

"When Cancer Recurs: Meeting the Challenge Again"

All material was printed and furnished by the U.S. Department of Health and Human Services.
The thesis submitted by Jean Marie Russell has been read and approved by the following committee:

Esther Matassarin-Jacobs, Director
Associate Professor, Nursing, Loyola

Judi Jennrich
Assistant Professor, Nursing, Loyola

JoAnn Hungelmann
Associate Professor, Nursing, Loyola

The final copies have been examined by the director of the thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the thesis is now given final approval by the Committee with reference to the content and form.

The thesis is therefore accepted in partial fulfillment of the requirements for the degree of Masters of Science in Nursing.

10/17/90
Date

Esther Matassarin-Jacobs
Director's Signature