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The Health Belief Model and Self Breast Examination in Nurses

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**THE HEALTH BELIEF MODEL
AND
SELF BREAST EXAMINATION IN NURSES**

By

Valorie L. Holwerda

A THESIS

**Submitted to
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In partial fulfillment of the requirements for the
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ABSTRACT

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SELF BREAST EXAMINATION IN NURSES

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The relationship between frequency of self breast examination and health belief model variables was assessed using a convenience sample of nurses. The self-administered survey measured perceived susceptibility, perceived seriousness, perceived benefits, perceived barriers, health motivation, and confidence on 5-point Likert-type scales previously developed by Champion (1993). Individual items measured the frequency of self breast examination and demographic variables. Correlational statistics were used to determine relationships. The results of the data analysis using the Spearman correlation found that perceived benefits ($p=.027$), health motivation ($p=.0289$) and confidence ($p=.008$) were positively correlated with frequency of self-breast examination. Perceived barriers ($p=.0002$) were negatively correlated with self-breast examination. Perceived susceptibility and perceived barriers were positively correlated with self breast examination but not at statistically significant levels.

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Chapter 1

Introduction

Breast cancer is one of the most significant health problems facing women today. One in eight women in the United States will develop breast cancer in her lifetime (Feuer & Wun, 1999). Excluding skin cancer, breast cancer is the most common cancer in women accounting for nearly one in three cancer diagnoses. It is the second leading cause of cancer mortality in American women, second only to lung cancer. Despite more sophisticated screening methods the rate of breast cancer mortality has remained almost constant since 1950. It is estimated that there were 175,00 new cases of invasive breast cancer and 40,000 new cases of breast cancer in situ in women in 1999. (American Cancer Society). It is estimated there were 43,300 deaths from breast cancer in 1999 (American Cancer Society). World wide, breast cancer is the third most frequent cancer in the world and the leading cause of cancer mortality in women (Parkin, Pisani, & Ferlay, 1999). Breast cancer cannot be prevented, however an important factor in the prognosis of breast cancer is early detection. Current screening methods to detect breast cancer include mammography, breast examination by a health professional, and breast self-examination.

While mammography and breast examination by health professionals may be costly, inconvenient, and potentially embarrassing to some women, self-breast examination (SBE) is a relatively simple, economical, and safe health-related behavior. In addition, studies have shown SBE to be correlated with the discovery of tumors in an earlier

clinical stage and smaller size (Feldman, Carter, Nicastrì, & Hosat, 1981; Foster & Constanza, 1984; Huguley, Brown, Greenberg, & Clark 1988).

Since SBE seems to be so convenient and easy, it might be expected that most women would readily use this simple screening device. However, the National Health Interview Survey (NHIS) reported that although 92% of women have heard of SBE (National Center for Health Statistics, 1988), only about 29% of women practice SBE monthly (Owen & Long, 1989). The United States Department of Health and Human Services reports nine out of ten women do not know how to do a self-breast examination correctly (1997). Nurses, as advocates of health promotion, are in a unique position to teach SBE technique and to encourage routine self-examination. However, few studies have examined the practice of SBE among nurses and their health beliefs related to breast cancer.

The health belief model (HBM) is a conceptual model that has given direction to explaining health related behaviors. In this model, the subjective experience (cognitions and perceptions) of the individual determines whether the person will engage in a specific health-related behavior (Mikhail, 1981).

The purpose of this study was to examine the relationship between the health belief model variables and the frequency of SBE among nurses. The health belief model variables studied were perceived susceptibility, perceived seriousness, perceived benefits, perceived barriers, health motivation, and confidence.

Chapter 2

Conceptual Framework

The following conceptual framework will briefly examine the health belief model (HBM) and identify the key components.

Health Belief Model

The HBM was developed in the early 1950's by Hockbaum, Kegeles, Leventhal, and Rosenstock to explain health related behavior at the level of individual decision making (Rosenstock, 1966). The model was formulated to try to answer questions about why individuals utilized health services, why they did or did not follow up on health care recommendations, and what factors influenced individual compliance with medical regimens.

The HBM proposes the following theoretical conditions and components. The individual's psychological readiness to take action relative to a particular health condition is determined by both the perceived susceptibility to a particular condition, by perceptions of the severity of the consequences of contracting the condition, and the individual's evaluation of the advocated health action in terms of its feasibility and efficaciousness. These perceptions are weighed against perceptions of psychological and other "barriers" or costs of the proposed action. Finally a stimulus or cue, either internal or external, must occur to trigger the appropriate health behavior (Maiman & Becker, 1974).

The HBM draws heavily on Lewinian social psychological theory. Lewin (1935) hypothesized that two variables influenced behavior: (1) the value of a particular outcome

to the individual, and (2) the individual's estimate of the probability that a particular action would result in the desired outcome.

The HBM in its original form identified four concepts that explain health-related behavior: perceived susceptibility, perceived severity, perceived benefit, and perceived barriers. The emphasis is on the perceptions of the individual. "The model assumes that a person's behavior is determined more by perceived reality than by the objective environment" (Jones, Jones, and Katz, 1988, p.1173).

Perceived susceptibility. "Perceived susceptibility refers to a person's view of the likelihood of experiencing a potentially harmful condition" (Champion, 1984, p.74). This is a subjective perception of the risk of contracting a particular condition.

Perceived severity. Perceived severity is concerned with how threatening a condition is to the individual. This includes the individual's evaluation of the medical consequences (disability, pain, disfigurement) and the social consequences (effects on family, work, social relationships) (Becker and Janz, 1985).

These two dimensions make up the individual's psychological state of readiness to take action. "Action will not occur unless the individual believes in both personal susceptibility and the serious repercussions of illness, should it occur" (Mikhail, 1981, p.67). This combination of susceptibility and severity can be termed the perceived threat.

Perceived benefits. Beliefs about the effectiveness of recommended actions constitute perceived benefits. An individual evaluates the recommended action in terms of its feasibility and efficacy in reducing the perceived threat.

Perceived barriers. Barriers can be defined as "beliefs the individual holds concerning the costs associated with taking a health action" (Melnyk, 1988, p.196). Barriers are the

potential negative aspects of a particular action. Barriers may be financial, physical, or psychological.

Over the past several years the model has been refined and two additional concepts have been added to give the model additional strength: health motivation and confidence.

Health motivation. In 1974, Becker proposed the addition of the concept of health motivation to the model. Health motivation is defined as "an individual's degree of interest in and concern about health matters" (Mikhail, 1981, p.68). An individual who is generally more aware of and interested in health is more likely to engage in healthy behaviors.

Confidence. Most recently, Rosenstock, Strecher, and Becker (1988) have proposed the addition of confidence as a separate independent variable. Confidence is defined as "...the belief that one can successfully execute a behavior that will then lead to a desirable outcome" (Champion 1993, p. 139). The concept of confidence has been equated with Bandura's construct of self-efficacy (Bandura, 1977).

In putting the concepts together into a coherent whole, Becker stated, "The combined levels of susceptibility and severity provided the energy or force to act and the perception of benefits (less barriers) provide a preferred path of action" (1985, p.42). Additionally, there must be a stimulus, or cue, to trigger the action. Cues can be internal (i.e. body states, symptoms) or external (i.e. mass media, advice, reminder cards). The intensity of the cue needed to initiate action is inversely proportional to the individual's psychological readiness.

Review of Literature

There is a wealth of literature about breast cancer and detection methods. First the literature regarding current screening methods and the effectiveness of these methods is presented. Next studies related specifically to self-breast examination and health beliefs will be examined. Finally, studies related to measuring SBE by nurses will be reviewed.

Current screening methods. The American Cancer Society (1998) recommends three screening methods for early detection of breast cancer: mammography, breast examination by a health professional, and SBE. Mammography is known to be an excellent screening method to detect cancers too small to be felt on physical examination (Feig, 1988). The Breast Cancer Detection Demonstration Project developed an ambitious mass screening program for the detection of breast cancer (Strax, 1990). This screening program, a joint effort of the American Cancer Society, the Guttman Breast Diagnostic Institute, and the National Cancer Institute enrolled approximately 280,000 women in twenty-nine groups for mammography by film or Xerox. Mammography was found to be particularly effective in detecting cancers in a localized stage. In women younger than 50 years old, 45% of the cancers were found by mammography alone.

The American Cancer Society (1999) guidelines recommend mammograms for women 35-40 years of age as a baseline and every two years thereafter until age 50 when yearly exams are recommended. Many women, however, do not receive regular mammograms. The Centers for Disease Control data (1999) found that 85% of all women over age forty reported having at least one mammogram in their lifetime but only 75% of all women over age fifty reported ever having a mammogram.

Breast examination by a health professional is also a very useful screening method. McGinnis (1989) estimates that a clinical breast exam done by an expert professional may detect as many as 80% of breast cancers with 25% or less presenting at Stage II or higher. Baker (1982) reported that 47.3% of all breast cancers were found both by mammography and physical exam, while 8.7% were found by physical examination alone in the absence of positive mammography findings.

The American Cancer Society (1999) recommends a breast examination by a health professional every three years for women under 40 years of age and annually thereafter. The NHIS found that only 44% of women aged 40 and over had a breast examination by a health professional within one year (National Center for Health Statistics, 1988). This appears to be related more to lack of physician contact than failure of the health professional to perform the exam. Winchester (1992) found that nearly 100% of physicians surveyed include physical examination of the breast routinely in checkups regardless of specialty.

Both the American Cancer Society and the National Cancer Institute also recommend monthly self- breast examination (SBE) for early detection of breast cancer. Research into the relationship between SBE and survival from breast cancer is ongoing. Feldman, Carter, Nicastrì, and Hosat (1981) conducted a retrospective study of 996 newly diagnosed breast cancer patients and found a highly significant ($p= 0.001$) relationship between periodic SBE and pathologic stage of disease at diagnosis. Women who did periodic SBE (3-12 times yearly) had tumors of smaller size and with less frequency of nodal involvement. This relationship remained stable after controlling for a wide range of variables.

Foster and Constanza (1984) conducted a similar study of 1004 newly diagnosed breast cancer patients. Patients reporting SBE practice had an earlier clinical stage of disease and fewer positive nodes at diagnosis than non-practitioners. This study followed the patients for an average of 52 months post-diagnosis and found the five-year survival rate for practitioners was 75% versus 57% for non-practitioners. The authors conclude that in this population of breast cancer patients, SBE was associated with earlier detection and improved survival.

Huguley, Brown, Greenberg, and Clark (1988) studied 2092 women with breast cancer. Thirty percent of SBE practitioners had breast cancer in Stages 0 or I compared to 19% in non-practitioners. For their study, Stage 0 was carcinoma in situ, Stage I was invasive carcinoma with a maximum dimension less than 5 cm and axillary nodes negative. In their study, 78% of all breast cancers were found because the patient identified a lump either by intentional examination or by accident.

All of these studies were conducted on patients currently diagnosed with breast cancer. The studies were neither randomized nor controlled. The definitions of staging and tumor size varied among studies and the results from the data cannot be combined.

Self breast examination and health beliefs. Stillman (1977) was the first to study the relationships between health beliefs and the practice of SBE. A convenience sample of 122 women was questioned regarding their health beliefs and the practice of SBE. The independent variables were perceived susceptibility, perceived benefits, and knowledge of breast cancer. Although 87% of participants scored high on perceived susceptibility and 97% high on perceived benefits, only 48% of the women practiced SBE. The author concluded that beliefs do not determine SBE practice. The study looked at each of the

beliefs separately and did not address the combined effect of the beliefs. The data analysis was limited to percentages.

Several researchers have built on the initial work of Stillman (Hallel, 1982; Massey, 1986; Redeker, 1989; Champion 1985, 1987, 1988; Gray, 1990; and Wyper, 1990). Hallel (1982) examined a sample of 204 women in an urban setting. Stillman's Health Beliefs instrument was used to measure HBM variables. The dependent variable was practice or non-practice of BSE. The independent variables were health locus of control, knowledge, perceived susceptibility, and perceived benefits. Perceived benefits was found to be the best single indicator of SBE practice.

Massey (1986) examined a convenience sample of 335 rural women using Stillman's instrument. Data were analyzed using a one-tailed t-test. Women who practiced SBE scored significantly higher ($p = .005$) on perceived susceptibility than non-practitioners. The demographic factors (age, race, education) were found to correlate significantly with frequency of SBE and perceived susceptibility.

Redeker (1989) studied a convenience sample of 48 women using Stillman's tool to measure HBM variables and included the independent variable of health locus of control. Using stepwise discriminate function analysis, HBM variables accounted for only 12.5% of the variance in frequency of SBE.

All of these studies used relatively small convenience samples. The subjects were generally more affluent and highly educated than most American women and the percentage of Caucasians was very high. All the studies, with the exception of Massey's, used women from urban settings. The studies used a variety of variables of the HBM but none of the studies reflected all of the concepts in the tools.

Champion (1985) studied the frequency of self-breast examination and HBM variables. The Health Belief Model Scale was developed to measure the independent variables of perceived susceptibility, perceived seriousness, perceived barriers, perceived benefits, and health motivation. The independent variables were examined on a 5 point Likert scale. Content validity was established by submitting the items to a panel of judges knowledgeable in HBM concepts. Construct validity was established by factor analysis. Internal consistency reliabilities using Cronbach's alpha ranged from .64 to .89. The results of the study revealed the combined influence of the five variables accounted for a statistically significant amount of the variance in SBE practice (26%) with perceived barriers accounting for the largest proportion of the variance (22%). Health motivation accounted for 2% of the variance.

In 1987 Champion conducted another study of 588 women using the Health Belief Model Scale and adding the concept of knowledge to the other variables. Six multiple-choice items were developed to measure knowledge about the techniques of SBE and knowledge about breast cancer. Content validity was established as with the previous study. Internal consistency reliability established by Cronbach's alpha was .63. In this study the HBM variables accounted for 28% of the variance with perceived barriers again accounting for the largest percentage (22%). Knowledge accounted for 4% of the variance. These studies were limited to convenience sampling and targeted mostly Caucasian middle to upper class women in an urban setting.

Champion (1988) again studied HBM variables and frequency of SBE in women 35 and older. Using a probability sample of 380 women, data were collected using in-home interviews. Previous scales were used with the addition of the concept of control.

Content and construct validity was established as with previous work. Internal consistency reliabilities for the six scales ranged from .64-.89 using Cronbach's alpha. All items were rated on a 7-point Likert scale. Results indicated that perceived barriers, health motivation, control, perceived susceptibility, and perceived seriousness all significantly contributed to the intent to practice SBE, accounting for 3% of the variance. Once again perceived barriers accounted for the largest percentage of the variance (22%), with health motivation accounting for 8% of the variance. The concepts of perceived susceptibility, perceived seriousness, and control together accounted for 7% of the variance. The probability sampling of these women allows more confidence in generalizing these findings.

Gray (1990) used Champion's Health Belief Model Scale to study the SBE practices of 347 rural women. HBM variables accounted for 26% of the variance in SBE practice. Unlike Champion's work, this study found that perceived benefits was the most important variable in predicting BSE frequency, accounting for 12.4% of the variance. A convenience sample of predominately white, married women was used and no questions were asked regarding proficiency of SBE.

Wyper (1990) used a modified version of Champion's 1987 Health Belief Model Scale to measure perceived susceptibility, perceived seriousness, perceived benefits, and perceived barriers associated with the practice of SBE. In addition, questions were asked to determine proficiency. A total of 202 questionnaires were analyzed. Using stepwise multiple regression, 20% of the variance in SBE could be explained by the variables of the HBM. However, only the scores for perceived susceptibility were normally

distributed leading to questions about the possible deficiencies in the measurement process and the homogeneity of the sample.

There have been several studies using HBM variables to examine SBE in women. Most of the research has been done with convenience samples of predominantly Caucasian, middle class, urban women. The variables studied were not consistent across studies. Studies based on Stillman's (1977) work did not include all parameters of the HBM, and most studies did not examine proficiency of SBE.

Nurses and breast self-examination. A few studies have been done regarding the SBE practice of nurses. Clarke and Sandler (1989) surveyed 99 nurses in a hospital setting. The survey asked questions about personal breast cancer practice and teaching of SBE to patients. A second survey about attitudes toward breast cancer and SBE was also conducted. They found that 82% of nurses practiced SBE at least every three months. In this sample 90.7% of the nurses believed themselves to be personally susceptible to breast cancer. Data analysis was confined to percentages. These results are in contrast to the findings of Cole and Gorman (1984) who found the SBE practice of nurses was similar to that of the general population and Sawyer (1986) who found that 51.25% of nurses practiced SBE regularly and 48.74% did not practice SBE. Ruda, Bourcier, and Skiff (1992) surveyed senior college students. While nursing students had a statistically greater knowledge about breast cancer than non-nursing students, there was no significant increase in frequency of SBE.

Similar results were found in a study of Greek female health care professionals. The study which included physicians, midwives, and nurses found only 34.7% of the 268 women sampled practiced SBE regularly (Patistea, Chliaoutakis, Darviri, & Tselika

1992). Fischera and Frank (1994) studied nurses and mammography screening. Barriers and benefits were negatively associated with obtaining mammograms whereas health motivation was positively associated with compliance.

In all of these studies percentages were used for statistical analysis and questions about attitudes were incidental to the findings. More research must be done to test the relationships between concepts of the HBM and the practice of SBE.

Mammography, breast examination by health professionals, and self-breast examination have all been shown to be effective techniques to detect breast cancer at an early stage. SBE has been widely studied because it is an easy, safe, and economical health related behavior. As stated, several researchers have studied the relationship between the variables of the HBM and the frequency of SBE in women. While these studies have varied greatly in population, sample size, and statistical techniques used; in general they support the hypothesis that there is a relationship between the HBM variables and the frequency of self- breast examination in women. Few studies have been done with nurses and no studies with nurses have been done using HBM scales.

Hypotheses

In order to continue to build the body of knowledge regarding the relationship between self-breast examination and health beliefs, this study used Champion's 1993 Health Belief Model Scale to determine nurses' personal practice related to SBE and health beliefs. The following research hypotheses were proposed:

1. Scores on the individual concepts of perceived seriousness, perceived susceptibility, perceived benefits, confidence, and health motivation will be positively correlated with the frequency of the practice of SBE among nurses.

2. Scores on the concept of perceived barriers will be negatively correlated with the frequency of the practice of SBE among nurses.

Chapter 3

Methodology

Design

This was a descriptive-correlational study. The study was conducted using a self-administered questionnaire distributed to Registered Nurses (RNs) and Licensed Practical Nurses (LPNs) at Holland Community Hospital.

Population and Sample

The population was all RNs and LPNs at Holland Community Hospital. The total population was 390 nurses. To be eligible for the study the participants were required to speak and read English and be able to complete the survey. The sample consisted of nurses on all inpatient and outpatient units who completed and returned the questionnaire. The sample was 99% Caucasian and 87% of the nurses were married. The sample was made of predominately RNs (84%), of which 32% were graduates of a diploma program and 52% had at least a bachelor's degree or higher. Sixty-six percent of the sample had more than 15 years experience in nursing.

Instrument

The 1993 Health Belief Model Scale developed by Victoria Champion was used in this study (see Appendix A). The questionnaire consists of 42 items addressing the variables of the HBM. Five questions examine perceived susceptibility; seven questions, perceived seriousness; six questions, perceived benefits; six questions, perceived barriers; eleven questions, confidence; and seven questions, health motivation.

In 1993 Champion completely revised the Health Belief Model Scales of 1984 and included a confidence sub-scale. All items for the six scales were formatted with a 5-

point Likert-type scale from strongly disagree (1) to strongly agree (5). The scales are scored so that a higher score means greater perceived susceptibility, perceived seriousness, perceived benefits, perceived barriers, health motivation, or confidence. The scales were assessed for content validity by a panel of three nationally known judges familiar with the HBM and breast cancer screening. One expert was involved in the original development of the HBM, one had worked on national grants with SBE and the HBM, and the third was nationally known for his expertise in measurement issues. Internal consistency estimates were calculated for each of the sub-scales using Cronbach's alpha. Sub-scale statistics and reliabilities are shown in Table 1 (Champion, 1993).

Table 1

Health Belief Model Scale Psychometrics

	Item Mean	Item SD	Cronbach's alpha	Test-Retest
Susceptibility	2.54	0.81	0.93	0.70
Seriousness	3.25	0.68	0.80	0.45
Benefits	3.88	0.52	0.80	0.45
Barriers	2.02	0.60	0.88	0.65
Confidence	3.31	0.57	0.88	0.65
Health Motivation	3.78	0.59	0.83	0.67

Demographic data were obtained and used to describe the sample (see Appendix B).

Procedure

A convenience sample was obtained by inviting nurses at Holland Community Hospital to participate. The purpose of the study was described at staff meetings of all nursing units and outpatient departments (Appendix C). Surveys were personally handed out to nurses at these meetings by the investigator. The nurses were requested to return the survey within five days to marked boxes located by the time cards on each unit. An additional box was located in the staffing office for convenience. Signs were placed on each unit reminding staff about the survey.

Participation in this study was voluntary. Return of the surveys implied consent. At the staff meetings subjects were informed that responses would be confidential and that they could not be individually identified. The investigator obtained approval from the Human Subjects Review Committee at Grand Valley State University and the Institutional Review Board at Holland Community Hospital prior to beginning the study. Approval to explain the study at staff meetings was obtained from each clinical manager. The phone number of the local chapter of the American Cancer Society was included as a resource in the instructions for completing the survey should answering questions about breast cancer provoke any anxiety in the subjects.

Chapter 4

Data Analysis

Data were collected over a six-week period in the fall of 1995. Self-administered written surveys were handed out at staff meetings after the purpose was explained. Two hundred and forty-one surveys were handed out during the course of the research, and 133 surveys (fifty-five percent) were returned in a useable form. All data were analyzed using the SPSS/PC+ statistical software system.

Characteristics of Subjects

The age of the participants ranged from 26 to 58 years (median = 41.5 years). Eighty-seven percent of the subjects were married. The ethnic background of the sample was overwhelmingly Caucasian (ninety-nine percent); however, this is reflective of the population of female nurses at Holland Community Hospital. Fifty-three percent of the sample were RNs with a Bachelor's degree or higher; thirty-two percent were RNs with a diploma or associate degree in nursing; and sixteen percent of the nurses were LPNs. Only eight percent of the sample had less than six years of nursing experience; eighty-three percent had eleven or more years of experience.

The typical subject was a Caucasian woman in her early forties and married. She has a Bachelor's degree in nursing and more than 11 years of experience as a nurse.

Instrument Reliability

Reliability for the sub-scales for this study was analyzed using Cronbach's Alpha. Results were similar to those obtained in Champion's own work with the tool and are summarized in Table 2.

Table 2

Reliability Comparison

Sub-scale	Current Data	Champion Data
Susceptibility	0.89	0.93
Seriousness	0.77	0.80
Benefits	0.74	0.80
Barriers	0.88	0.88
Confidence	0.82	0.88
Health Motivation	0.76	0.83

Research Hypotheses

Hypothesis I. Scores on the individual concepts of perceived seriousness, perceived susceptibility, perceived benefits, confidence, and health motivation will be positively correlated with the frequency of the practice of SBE among nurses.

The data for the individual sub-scales was analyzed using the Spearman correlation coefficient. The findings are summarized in Table 3

Table 3

Sub-scale Correlations

Sub-scale	Spearman Rho	(Significance)
Perceived Susceptibility	.1098	(.2428)
Perceived Seriousness	.0674	(.4427)
Perceived Benefits	.1926	(.0276)*
Confidence	.2303	(.0079)*
Health Motivation	.1895	(.0289)*
*notes statistical significance		

Support for the research Hypothesis I was found for three of the five sub-scales. Perceived benefits ($p=.027$), confidence ($p=.008$), and health motivation ($p=.0289$) were positively correlated with the frequency of the practice of SBE at statistically significant levels. Perceived susceptibility and perceived seriousness were also positively correlated with SBE but at levels that were not statistically significant.

Support was also found for Hypothesis II: the concept of perceived barriers will be negatively correlated with the frequency of the practice of self-breast examination among nurses. The data for this sub-scale were also analyzed using the Spearman correlation coefficient. The $-.31532$ result was statistically significant ($p=.0002$) and the research hypothesis was supported.

Other Findings

Frequency of SBE. Thirty percent of nurses performed SBE monthly; thirty-two percent performed SBE six to eight times per year; thirty-seven percent performed SBE one to five times per year; and one percent never performed SBE.

How nurses were taught SBE. A physician taught fourteen percent of nurses, twenty-six percent were taught by another nurse, thirty-nine percent were taught by reading a brochure, nineteen percent were taught by unspecified other means, and two percent of nurses were never taught SBE.

Using Kruskal-Wallis 1-way ANOVA differences among ways nurses were taught SBE was determined. This was not statistically significant (Chi-square=2.34, $p=.3100$). However, using the Spearman Correlation Coefficient, frequency of SBE and age were positively correlated at a significant level ($r=.191$, $p=.028$).

Chapter 5

Discussion and Implications

The two major findings of this study are 1) that the concepts of perceived benefits, confidence, and health motivation were positively correlated with the frequency of SBE in nurses and 2) perceived barriers were negatively correlated with SBE at statistically significant levels. The concepts of perceived seriousness and perceived susceptibility were also positively correlated with the frequency of SBE but not at statistically significant levels. This supports previous research (Champion, 1985, 87, 88; Hallel, 1982; and Wyper 1990).

In this study, confidence was the most statistically significant concept related to SBE ($p=.008$). If a nurse felt satisfied in her ability to perform SBE correctly and detect abnormalities she was more likely to engage in SBE. In addition, if she was generally motivated to perform healthy behaviors and perceived a benefit from SBE, she was also more likely to practice SBE. Perceived seriousness and perceived susceptibility were correlated but not at significant levels.

As with previous studies (Champion, 1988; Norman and Tudiver, 1986; and Trotta, 1980) perceived barriers yielded the highest correlation with frequency ($p=.0002$). Barrier items addressed such issues as causing one to worry about getting breast cancer, embarrassment, unpleasantness, difficulty of finding a lump, and anxiety about finding a lump. If a nurse scored these items highly, her likelihood of performing SBE was lower. Age and frequency were significantly correlated ($p=.028$) perhaps because nurses may be aware that the risk of breast cancer increases with age.

Implications for Nursing Practice

Findings from this study have multiple implications for health care professionals interested in increasing SBE compliance. Perceived barriers were the most highly correlated with practice of SBE, and interventions should be developed to specifically address issues of embarrassment about performing SBE and anxiety that SBE would make women more likely to worry about breast cancer. Women sometimes forget to do monthly SBE and interventions such as the “Phone a Friend for Life” program, which encourage women to phone friends to remind them to do a monthly exam show potential. Some women have lumpy breasts and may have difficulty knowing if they are feeling an actual lump or simply breast tissue, so interventions that would allow women practice in a supervised setting to become comfortable in performing SBE could remove the barriers of anxiety about proficiency and ability to find a lump if present.

Reinforcing the positive concepts related to the HBM can impact self-breast examination practice. Confidence was the concept most positively correlated with SBE practice. Means of assessing confidence should be developed for use with individuals and groups. Women with low confidence levels could be assisted to identify possible steps for repeated guided practice with a trained health care provider, or to have health care professionals monitor breast changes. Promoting good health habits in other areas of the woman’s life such as good nutrition, regular exercise, smoking cessation, and stress reduction can increase health motivation, which is positively correlated with an increase in the frequency of SBE.

While there were no significant correlations between the practice of SBE and how women were taught, it should be noted that almost forty percent of nurses were taught by brochure. Health care professionals should scrutinize printed material carefully and select the best material available for patient teaching.

There are also implications for health care administrators. The costs of breast cancer treatment are high. Providing free or discounted screenings for breast cancer, including mammograms may encourage nurses and others in health care settings to practice early detection interventions. On site mammography centers in hospitals may also impact early detection practice by making it more convenient for nurses to get examinations. Encouraging SBE in nursing education settings, teaching SBE as part of a class on breast cancer, and promoting general wellness practices (including SBE) may also encourage nurses to be more aware of their own health in regard to breast cancer.

In the academic setting health promotion practices should be stressed as part of the general curriculum. In sections about cancer SBE can be stressed to students as an excellent screening device both for patients and for the students themselves. Nursing students could even be encouraged to sponsor general education about SBE for the larger college/university student body.

Limitations

There are several considerations that practitioners must recognize when reviewing the results of this research. This was a correlational study. Even though several variables proved significant in predicting the frequency of SBE, little is known about how a change in these variables might affect actual behaviors. This was a convenience sample that was very homogeneous in nature and the findings cannot easily be expanded to other

populations. While the percentage of nurses in this study reporting monthly SBE was similar to studies in non-nurses, the very fact that these were health care professionals may have influenced the response to some questions in the survey. The data did not separate RN and LPN responses. Since education was a factor in other research, findings may be different if these two groups were analyzed separately.

The statistics were limited to correlations, no multiple regression analysis, or other more sophisticated statistics were used so the application of the results is more limited. The sub-scale correlations (Table 3) for the concepts of perceived susceptibility and perceived seriousness were somewhat weak. This measure of internal consistency may help explain why these concepts were not correlated at statistically significant levels. However, it should be noted that many researchers in various studies have used this tool. The demographic data were primarily ordinal and therefore limited statistics could be used in correlating various components to frequency.

Suggestions for Further Research

Research is needed to test the causal effects of attitudinal variables on self-breast examination practices of women. Interventions aimed at specific sub-scales of the model should be incorporated into experimental designs to test the suggested relationships. For example, an intervention could be designed to increase awareness of the seriousness and susceptibility to breast cancer and then measure scores of those two variables pre-intervention and post-intervention. A demographic tool could be developed to measure interval data that could be used to test various relationships to the variables.

Conclusion

Numerous studies have been conducted testing the relationship between the Health Belief Model variables of perceived seriousness, perceived susceptibility, perceived benefits, perceived barriers, confidence, and health motivation. This research studying nurses' attitudes about SBE adds to the body of knowledge and generally supports previous research. The two research hypotheses were supported for this population of nurses.

APPENDICES

Appendix A

Health Belief Model Instrument

The following questions are related to your experiences with breast cancer and breast self-examination. There are no right or wrong answers and you do not have to practice self-breast examination to complete the survey. Please circle the number that best describes your feelings about each statement.

1= Strongly Disagree (SD)

2= Disagree (D)

3= Neutral (N)

4= Agree (A)

5= Strongly Agree (SA)

	SD	D	N	A	SA
1. It is extremely likely I will get breast cancer.	1	2	3	4	5
2. I feel I will get breast cancer in the future.	1	2	3	4	5
3. There is a good possibility I will get breast cancer in the next ten years.	1	2	3	4	5
4. My chances of getting breast cancer are great.	1	2	3	4	5
5. I am more likely than the average woman to get breast cancer.	1	2	3	4	5
6. The thought of breast cancer scares me.	1	2	3	4	5
7. When I think about breast cancer, my heart beats fast.	1	2	3	4	5
8. I am afraid to think about breast cancer.	1	2	3	4	5
9. Problems I would experience with breast cancer would last a long time.	1	2	3	4	5

10. Breast cancer would threaten a relationship with my boyfriend, husband, or partner. 1 2 3 4 5
11. If I had breast cancer my whole life would change. 1 2 3 4 5
12. If I developed breast cancer, I would not live longer than five years. 1 2 3 4 5
13. When I do breast self-examination I feel good about myself. 1 2 3 4 5
14. When I complete monthly breast self-examination I don't worry as much about breast cancer. 1 2 3 4 5
15. Completing breast self-examination each month will allow me to find lumps early. 1 2 3 4 5
16. If I complete monthly breast self-examination I will decrease my chance of dying from breast cancer. 1 2 3 4 5
17. If I complete breast self-examination monthly I will decrease my chances of requiring radical or disfiguring surgery if breast cancer occurs. 1 2 3 4 5
18. If I complete monthly breast self-examination it will help me to find a lump which might be cancer before it is detected by a doctor or nurse. 1 2 3 4 5
19. I feel funny doing breast self-examination. 1 2 3 4 5
20. Doing breast self-examination during the next year will make me worry about breast cancer. 1 2 3 4 5

21. Breast self-examination will be embarrassing to me. 1 2 3 4 5
22. Doing breast self-examination will take too much time. 1 2 3 4 5
23. Doing breast self-examination will be unpleasant. 1 2 3 4 5
24. I don't have enough privacy to do breast self-examination. 1 2 3 4 5
25. I know how to perform breast self-examination. 1 2 3 4 5
26. I am confident I can perform breast self-examination correctly. 1 2 3 4 5
27. If I were to develop breast cancer I would be able to find a lump by performing breast self-examination. 1 2 3 4 5
28. I am able to find a breast lump if I practice breast self-examination alone. 1 2 3 4 5
29. I am able to find a breast lump which is the size of a quarter. 1 2 3 4 5
30. I am able to find a breast lump which is the size of a dime. 1 2 3 4 5
31. I am able to find a breast lump which is the size of a pea. 1 2 3 4 5
32. I am sure of the steps to follow for doing breast self-examination. 1 2 3 4 5
33. I am able to identify normal and abnormal breast tissue when I do breast self-examination. 1 2 3 4 5

34. When looking in the mirror, I
can recognize abnormal changes
in my breast. 1 2 3 4 5
35. I can use the correct part of
my fingers when I examine my
breasts. 1 2 3 4 5
36. I want to discover health
problems early. 1 2 3 4 5
37. Maintaining good health is
extremely important to me. 1 2 3 4 5
38. I search for new information
to improve my health. 1 2 3 4 5
39. I feel it is important to
carry out activities which
will improve my health. 1 2 3 4 5
40. I eat well-balanced meals. 1 2 3 4 5
41. I exercise at least three
times a week. 1 2 3 4 5
42. I have regular health check-
ups even when I am not sick. 1 2 3 4 5

This is the end of the survey. Please return the survey to the folder on your unit or to the nursing office. Thank you very much for your assistance.

Appendix B

Demographic Information

Please circle the correct answer or give answer.

- 1. Year of Birth_____.**
- 2. Race: a)Asian d)Hispanic**
b)Black e)Other
c)Caucasian
- 3. Marital status:**
a)Never been married
b) Married
c) Widowed
d) Divorced
e) Separated
- 4. Highest level of education:**
a) LPN
b) RN-Diploma
c) RN- Associate Degree
d) Bachelor's Degree (non-nursing)
e) Bachelor of Science- Nursing
f) Master's Degree (non-nursing)
g) Master of Science- Nursing

- h) Doctorate (non-nursing)**
- i) Doctorate (nursing or related field)**

5. Years of experience as a nurse:

- a) 0-5 years**
- b) 6-10 years**
- c) 11-15 years**
- d) 16-20 years**
- e) More than 20 years**

6. Unit where you work:

- a) Critical Care/Telemetry**
- b) General Med-surg/Orthopedics**
- c) General Med-surg/Oncology**
- d) Women's and Children's**
- e) Psychiatry**
- f) Surgery (including pre-post and outpatient)**
- g) Boven Birth Center**
- e) Emergency/Prime Care**
- f) Other (Please specify)_____**

7. How often do you perform self-breast examination?

- a) Every month**
- b) 6-8 times per year**
- c) 1-5 times per year**

d) Never

8. How did you learn self breast examination?

a) Taught by physician

b) Taught by nurse

c) Pamphlet or brochure

d) Other (please list) _____

e) Never taught

Appendix C

Thank you for allowing me to have a few minutes of your time. I am a registered nurse here at HCH and a graduate student at Grand Valley State University attempting to determine ways to improve the health of women. I am conducting research about nurses' health beliefs and the practice of self-breast examination and would very much appreciate your help. I am here to ask all of you to complete a survey related to health beliefs and SBE. The survey consists of 42 questions about health beliefs and SBE. In addition, there is a short demographic survey. The survey will take less than fifteen minutes to complete. There are no right or wrong answers, and you do not need to perform self-breast examination to complete the questionnaire.

Participation in the survey is completely voluntary and returning the survey indicates your consent. The answers you give are completely confidential. No names will ever be used and all the surveys will be destroyed after the responses have been analyzed.

The survey can be returned to marked boxes on each unit. The boxes will be placed next to the time clock. There will also be a box in the staffing office. Please return the survey within the next five days.

If you have any questions about the survey please contact me at Ext. 3211 from 7:30 a.m. to 4:00 p.m. At other times you can reach me at 392-4179. If you would like additional information about breast self-examination or breast cancer, please contact the local branch of the American Cancer Society at 396-5576. If you wish to know the results of the study please contact me and I would be happy to share that information when the study is completed.

Please take a few moments tonight to complete the survey and thank you very much for your help.

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