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**Antecedents and self-help outcomes: Interventions for women
with breast cancer**

Wang, Tze-Fang, M.S.

The University of Arizona, 1991

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**ANTECEDENTS AND SELF-HELP OUTCOMES:
INTERVENTIONS FOR WOMEN WITH BREAST CANCER**

by
Tze-Fang Wang

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A Thesis Submitted to the Faculty of the
COLLEGE OF NURSING
In Partial Fulfillment of the Requirements
For the Degree of
MASTER OF SCIENCE
In the Graduate College

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STATEMENT BY AUTHOR

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ABSTRACT

The purpose of this secondary analysis of data from the pilot study of Self-Help Intervention Project (SHIP) was to describe the relationship among subject background and nursing interventions (self-help class, independent study, and nurse case manager) in 29 women with breast cancer at time one, prior to participation in one of three nurse interventions. Twenty six women provided data upon completion of the nurse interventions.

A low statistical relationship was found between demographic variables of age ($r=.29$, $p=.10$) and income ($r=.32$, $p=.09$) with the nurse case manager intervention. Having had a partial mastectomy ($r=.34$, $p=.07$) was positively related to the independent study. Having received chemotherapy ($r=.33$, $p=.08$) was positively related to the self-help class intervention. The information seeking style blunter subscale was found to have a negatively statistically significant relationship with the self-help class intervention ($r=-.31$, $p=.10$) and a positive relationship with the nurse case manager intervention ($r=.33$, $p=.08$). The nurse case manager intervention was found to be positively related to adult self-care ($r=.29$, $p=.10$).

Results indicate that nurses should continually assess their patients' individual variables in order to provide appropriate interventions.

CHAPTER I
INTRODUCTION

Breasts are the emotional symbol of women's pride in their sexuality and their motherliness (Becon, Cutler & Renneker 1952). For mastectomy patients, the loss of a breast may produce a severe emotional crisis (Pfefferbaum, Pasnau, Jamison & Wellish 1978; Polivy, 1977; Ray, 1977; Schain, 1976). The diagnosis of breast cancer can cause major life style changes leading to a decrease of self-esteem, confidence, role function, positive body image, social image, and intimate sexual relationships (Baum & Ray, 1985). Patients often have difficulty in coping with these physiological and psychological changes. Some patients withdraw from their family, become isolated from society, and refuse to comply with treatment. These reactions affect husbands and families who also are faced with adjustment problems (Baider & Kaplan De-Nour, 1984).

Health care providers need to understand how breast cancer patients deal with the stress to promote the quality of their life and to reduce morbidity. This study proposed to examine nurse interventions which promote a self-help response to breast cancer. Research findings reported in the literature indicate that many factors can interfere with or promote the learning of self-help behaviors by patients.

Among the factors influencing self-help are demographic characteristics, illness and treatment characteristics, and personality variables. Such factors include age, education, marital status, treatment regimen characteristics, severity of the illness, social supports, health resources, and personal information seeking style.

Another factor influencing learning self-help is the person's level of information seeking style. Studies conducted by Grossarth-Maticcek, Schmidt, Vetter and Arndt (1984); Newton (1983), and Simonton, Mathews-Simonton and Sparks (1980) found that breast cancer patients in self-help education programs have a longer survival rate than do uneducated patients. In contrast, the findings of the Morgenstern, Gellert, Walter, Ostgeld and Siegel (1984) study found that in 34 women taking a self-help program no significant prolongation of life occurred, but there was an improved quality of life.

Jacobs, Ross, Walker and Stockdale (1983) tested the behavior of cancer patients to determine if psychological and social functioning could be enhanced in patients by either education or participation in a peer support therapy group. They used the Cancer Patient Behavior Scale to pre-test and post-test 81 patients on educational outcomes. Following education, patients experienced significant improvement in the frequency of anxiety, treatment problems,

depression, and life disruption. Thus, interventions with educational programs represent effective and inexpensive means of improving psychological and social behavior. Education could assist patients in achieving and maintaining an optimal state of health (Johnson, 1982).

The Farash (1978) study of 80 women compared three groups of women with breast cancer. One group had individual counseling once per week for 12 weeks. Another group met once a week for self-help group counseling for 12 weeks. A third group received no counseling or intervention. The results of this study found that the women in the group without an intervention had more body image disturbances than those in the group with an intervention.

The Spiegel, Bloom and Yalom (1981) study of 109 women with metastatic breast cancer also compared two types of breast cancer patients: those who had contact with a self-help group and those who did not. The result was that women in the self-help group had significantly fewer negative feelings such as anxiety, fatigue, tension, and confusion than women in the group with no self-help. The Van den Borne, Dam-de Meyan and Pruyn (1986) study indicated common problems such as uncertainty, loss of control, and negative feelings in cancer patients. The concept of a self-help group for cancer patients is of particular concern for

addressing these problems and for learning interventions and improving coping strategies which involve an education class in an oncology setting. Patients are able to obtain information and knowledge from the educator while at the same time contributing to the health care professional information that will assist women in obtaining the best results from breast cancer treatment.

Most mental health professionals are well aware of the rise of the self-help group movement in recent years. However, this valuable resource is still underutilized among cancer patients (Siegel, 1990). Some professionals think it undesirable for patients to have too much opportunity to compare their condition and adjustment with that of other patients because they believe such comparisons may depress patients when they are doing worse than others or create guilt when they are doing better. Taylor (1986) suggested that self-help groups be used as a complement to professional assistance, not in place of it.

Statement of Purpose

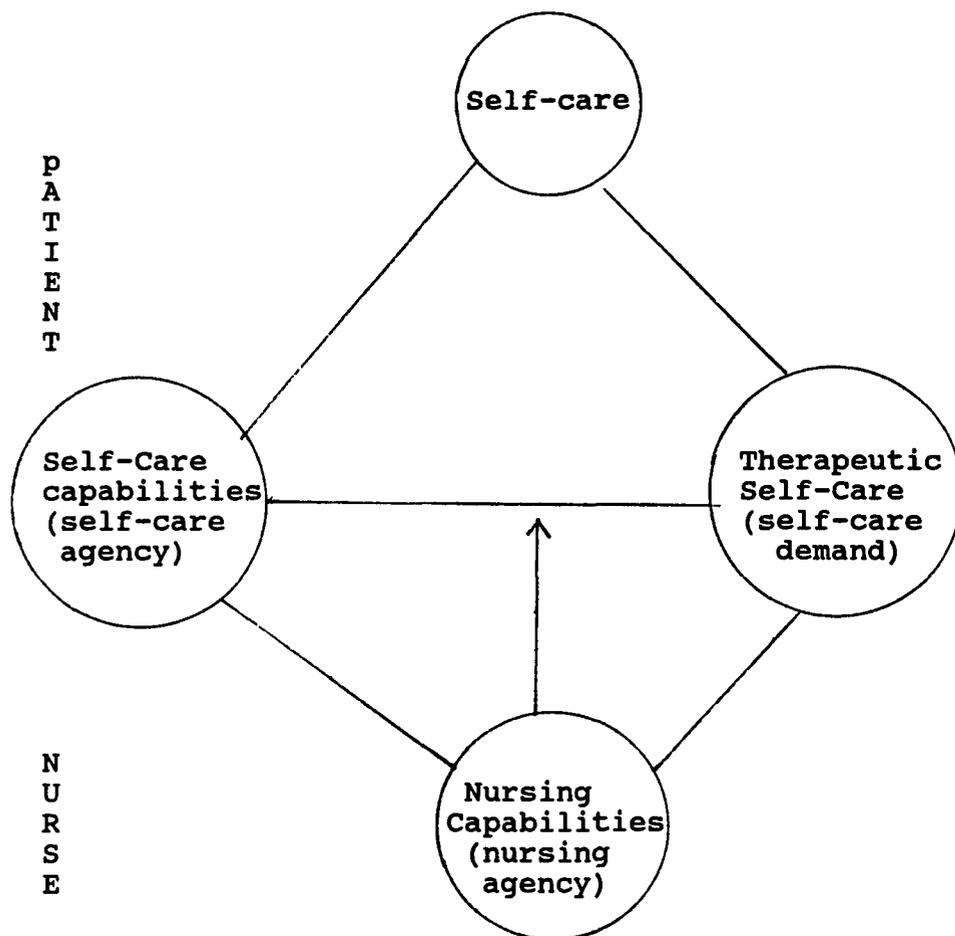
The purpose of this study was to learn more about the women in the Self-Help Intervention Project pilot Study (Braden, Mishel, Longman and Burns, 1990) relative to their preference of type of intervention and about the efficacy of promoting self-help outcomes during cancer treatment for

women having a diagnosis of breast cancer. Nurse interventions provide information, enhance patients' abilities to use the information, and thus support uncertainty-reducing interpretation of health outcomes. The first data collection in the SHIP study provided information about the subjects' demographic characteristics at the time of entrance into the project, and the start of the selected nursing interventions (self-help class, independent study and individual contact with case manager). The second data collection occurred approximately six weeks after the first data collection, and coincided with the end of the selected nursing interventions. Data were compared to determine the impact of the nursing interventions on self-help outcomes.

Conceptual Framework

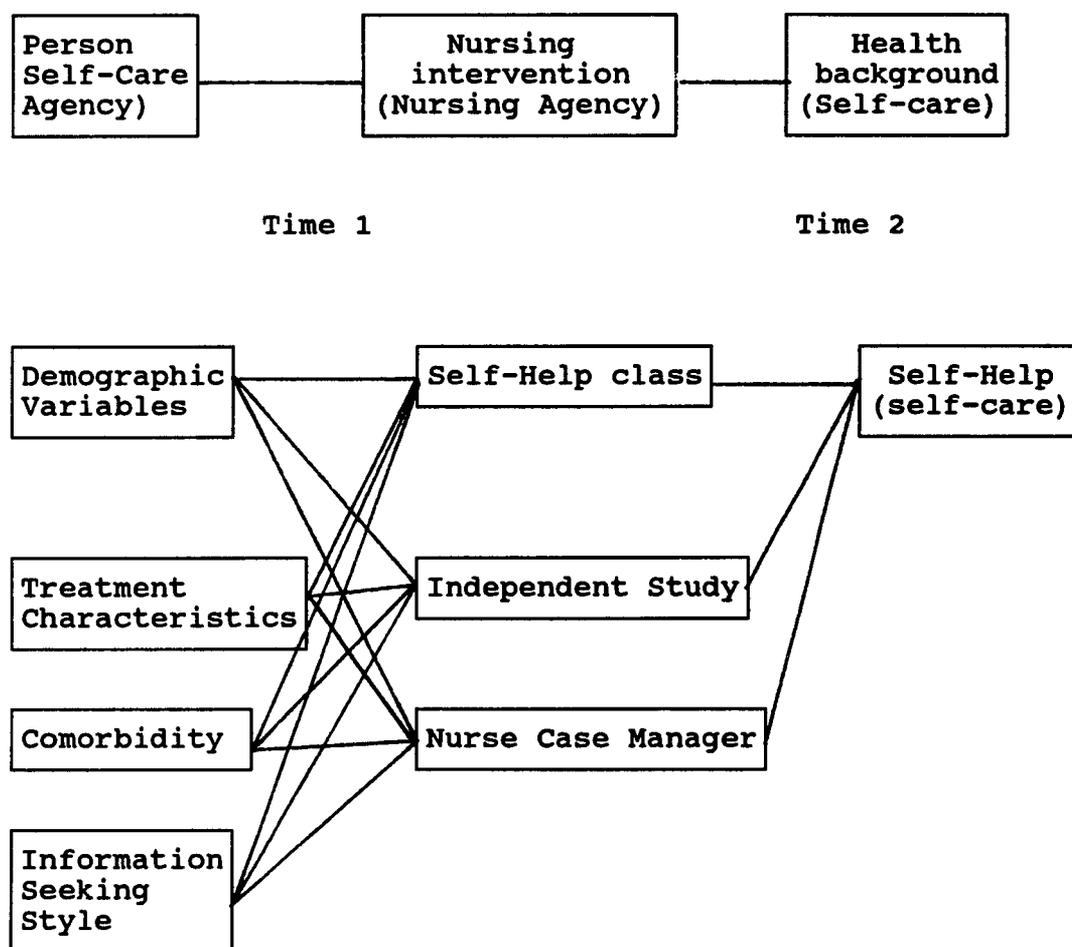
Orem's Self-Care Practice Model (Figure 1) provided a basis for this study (Figure 2). In Orem's (1985) view, self-care is the practice of activities that individuals personally initiate and perform on their own behalf in maintaining life, health, and well-being. Persons who participate in self-care possess some knowledge of their condition, and health professionals can build on that knowledge and supplement it by enhancing the individual's practices and capabilities (Dodd, 1985). Persons have

Figure 1. Conceptual framework for nursing



From "Self-Care Practice Model" by D.E. Orem, 1985, Nursing Concepts of Practice, p.32. Copyright 1985 by New York: McGraw-Hill.

Figure 2. Conceptual Framework for Study



the right to choose or not to choose their own health options (Orem, 1980); that is, women with breast cancer have the right to participate in self-care through their capacity for decision making (Bromley, 1980).

Self-Care Demands are continuous self-care actions that must be done to meet self-care requisites. The requisites consist of universal self-care, developmental self-care, and health-deviation. Universal self-care activities are required by all humans to meet their basic needs, and include the need for air, food and water, elimination, activity and rest, solitude and social interaction, safety, and normalcy. Developmental self-care activities are associated with the creation and maintenance of conditions that allow for proper development and assistance in overcoming problems related to development. Health-deviation self-care requisites are seeking and securing appropriate medical assistance to overcome illness or accept and function within the constraints imposed by chronic disease. For example, breast cancer has different stages of diagnosis from stage I to stage IV (American Cancer Society, 1991).

Health providers during different cancer stages should discuss with patients their treatment and their needs and provide appropriate information to deal with breast cancer (Scott, 1983). In other words, the health-deviation self-

care requisites have to facilitate patients' self-care activities to prevent or cope with the different stages of cancer treatments (Dodd, 1984).

Self-care capabilities (self-care agency) are those abilities of the patients to meet their own self-care demands. It is important to identify the adequacy of self-care abilities to determine the presence of self-care deficits (Orem, 1985).

Conditioning factors influence the ability of clients to meet their own self-care needs, and also influence patients' values on the elements of self-care demand. Age, education, marital status, socioeconomic level, type of treatments, type of surgery, comorbidity, and personality variables may affect a patient's ability to engage in purposeful self-care activities (Hanacharunkul, 1989). In the case of this study, the concepts of interest were the demographic characteristics (age, education, income, and marital status), and treatment characteristics (surgery, chemotherapy, radiation, and hormone therapy), and comorbidity and personality variables (information seeking style) of women entering self-help activities (Figure 2).

"Self-care deficits indicate an imbalance between self-care demands and self-care abilities in such a way that self-care agency is inadequate to meet self-care demands" (Orem, 1985, p. 31). The deficits may be due to lack of

knowledge about self-care, inability to perform self-care activities, and malfunction of the individual in a physical or psychological way (Dodd, 1988). Seeking information to gain knowledge may be viewed as a part of self-care behavior needed to correct the deficit of lack of knowledge.

Therefore, nurses should consider the basic knowledge of women with breast cancer and individual style need to design appropriate interventions that are meaningful to patients.

Orem's self-care model is an example of a nursing model that can be used to inform the care of breast cancer patients. Promotion and encouragement of the patient's self-care abilities are important strategies in the nursing care of cancer patients. The nursing process is based on a patient's background data and client interaction, from which assessment of self-care demands and self-care ability, their conditioning factors, and the determination of self-care deficit result.

The appropriate nursing measures are to meet goals through therapeutic self-care demand, to overcome self-care deficit, and to foster and preserve self-care abilities (Orem, 1985). Depending on patients' needs, nurses can use various methods to assist them to perform their self-care. For example, women diagnosed with breast cancer who are receiving treatment such as chemotherapy, radiotherapy, hormone therapy, and different types of surgery may need

self-care from a health care provider to meet their complete self-care requisites. The nurse interventions defined in this study consist of self-help classes, independent study only or individual contact with a case manager (Figure 2). The goal of self-help is problem-solving activity, reprioritizing abilities activity, communication patterns for cognitive reframing, and self-belief activity to develop skills in relaxation exercises (Braden et al., 1990). All of these activities are determined by the breast cancer patient's requisites and demands to improve self-care abilities. The nurse supports and guides the patient in developing new methods of coping strategies or redefining those used in the past. The nurse promotes an environment by helping breast cancer patients deal with physical and psychological stresses. Orem (1985) described nursing interventions according to five general methods of helping others: (a) acting or doing for another, (b) supporting (physically or psychologically), (c) guiding, (d) providing an environment (physical or psychosocial) that promotes personal development, and (e) teaching.

Orem (1985) stated "health is used in the sense of a state of a person that is characterized by soundness or wholeness of developed human structure and of bodily and mental function" (p. 179). Therefore, "nurses should require knowledge of the influence of physical, biological,

and social agents in the environment on individual, family and community health" (p. 198). Health at the conceptual level is presented in this study as the perceived self-help ability of women receiving treatment for breast cancer before (time 1) and after (time 2, six weeks later) receiving a nursing intervention (a self-help class, independent study or contact with a nurse case manager).

Problem Statement

Data were obtained in a pilot study for the Self-Help Intervention Project (SHIP) which was conducted to examine whether different learning contexts would increase enabling skills and subsequently enhance self help behaviors of breast cancer patients (Braden, Mishel, Longman & Burns, 1990). Secondary analysis of the data may provide answers to the questions of how demographic characteristics and treatment characteristics are related to preference for type of intervention, and how the type of nursing intervention is related to self-help outcomes.

Research Questions

1. What are the characteristics of the women with breast cancer who participated in the self-help classes type of intervention?

2. What are the characteristics of the women with breast cancer who participated in the independent study intervention?
3. What are the characteristics of the women with breast cancer who participated in the nurse case manager intervention?
4. What is the relationship between the demographic variables of the women with breast cancer (age, education, income, and marital status) and type of intervention (self-help classes, independent study, and individual contact with a nurse case manager)?
5. What is the relationship between the treatment characteristics of the women with breast cancer and the type of intervention (self-help class, independent study, and individual contact with a nurse case manager)?
6. What is the relationship between the co-morbidity of the women with breast cancer and the type of intervention (self-help class, independent study, and individual contact with a nurse case manager)?
7. What is the relationship between the information seeking style of the women with breast cancer and the type of intervention (self-help class, independent

study, and individual contact with a nurse case manager)?

8. What is the relationship between type of intervention (self-help class, independent study, and individual contact with a nurse case manager) and self-help outcomes following completion of the nurse intervention?

Definitions of Terms

Type of Treatment(s)--There are several kinds of therapy used to treat breast cancer: (1) Radiation Therapy (treatment with radiation that destroy cancer cells); (2) Chemotherapy Therapy (Cytotoxic therapy treatment with drugs that destroy cancer cells); (3) Hormone Therapy (treatment with drugs that influence the effect of the body's own hormones on cancer cell growth); and (4) Surgery.
Type of Surgery-- (American Cancer Society, 1991).

- 1) Lumpectomy or Tylectomy (removal of tumor plus a border of surrounding normal tissue).
- 2) Halsted Radical (removal of entire breast, skin, chest wall muscles, axillary under the arm lymph nodes).
Modified Radical (removal of entire breast and most but not all axillary under the arm lymph nodes; major chest wall muscles remain intact).

- 3) Total (simple), removal of entire breast; most or all axillary (under the arm) lymph nodes and major chest wall muscles remain intact.
- 4) Partial (Segmental), removal of tumor plus a wedge of surrounding normal tissue and a portion of the overlying skin.
- 5) Reconstructive Mammoplasty, rebuilding of the breast using plastic surgery by placing an implant under the skin.

Information Seeking Style--The level of perceived instrumental involvement in seeking information style. The instrument identifies those who blunt and those who monitor information. There are two types of information seekers:
(1) Blunters are those who do not seek information; and
(2) Monitors are those who seek a large amount of information (Miller & Mangan, 1983).

Comorbidity--other than the presence of breast cancer, the combined numbers and types of other diagnosed chronic conditions (Yancik & Yates, 1989).

Self-Help Class--The self-help class focused on activities that build problem-solving skills, reprioritizing abilities, cognitive reframing skills, and belief in self (Braden, 1990).

Self-Help--The level of perceived instrumental involvement in carrying out adult role function (Braden, 1990).

Self-Care--Self-care is the practice of activities that individuals personally initiate and perform on their own behalf in maintaining life, health, and well-being (Orem, 1985).

Significance of the Study

Of all the cancers, breast cancer is the most common among women. An estimated 175,000 new cases will occur in the United States during 1991. That means approximately one out of every nine women will develop breast cancer in their lifetime. The breast cancer incidence rate has increased about 3% a year since 1980, from 84.8 per 100,000 in 1980 to 111.9 in 1987. The estimated mortality is 44,800 deaths in 1991; in women, it is the second major cause of cancer death (American Cancer Society, 1991).

The race-related five-year survival rate in breast cancer in 1960-63 was 63% for whites, 46% for blacks; the rate has increased to 75% (whites), and 63% (blacks) from 1974 to 1980. During the period 1981-86, the rate of survival of white women had increased to 78%, according to the American Cancer Society (1991). Currently, the survival rate is 91%. According to the American Cancer Society (1991), if breast cancer is in situ (not invasive), the survival rate approaches 100%. If the cancer has spread regionally, however, the survival rate is 69%; for persons

with distant metastases, the survival rate is 18%. Because cancer is now more treatable, more women are living with this chronic illness for a longer time. Therefore, health professionals need to focus more on a treatment plan that enables women to provide self-care or self-help, adapt to changes in life style, and react to emergencies (Fredett & Beattie, 1986).

This study of the existence of self-help as a response to chronic illness (breast cancer) has important health care implications for the individual and the family. Treatment of chronic disease such as cancer involves time and money and economic pressure on the individual and family. According to Connelly (1987), the self-care model in chronic illness indicates that financial costs (including physical and psychological costs) of implementing self-help behaviors critically affect the individual and the quality of family.

Friedman, Dansboy, Davis, Leonard, Oberg and Sanders (1988) also investigated the cost-effectiveness of a self-care program in women having high risk Cesarean sections. They compared a group, consisting of 179 patients who had a self-care program and a group of 159 patients who had no self-care program. They found that quality care in the self-care group was maintained without increasing costs, suggesting that self-care is a viable alternative to traditional health care.

Gibson and Pulliam (1987) reported a decrease in the nurse/patient ratio as a result of implementing self-care on medical/surgical units. Patients chose their own clothing to wear and assumed responsibility for self-medication according to a schedule. The patients' behavior in the self-care environment is similar to behavior at home. Nurses observed the patients to determine the effectiveness of teaching approaches and the need for further instruction and reinforcement or modification of the self-care plan. Findings suggested that a self-care plan can provide inpatient hospital care at a reduced cost without compromising the quality of care and create a self-care environment that promotes patient responsibility. It can include patient education emphasizing life-style changes and family involvement. Reinforcement of self-care behaviors and knowledge emerged as an important part of nursing interventions.

Orem's (1985) self-care model indicates that nursing intervention is required when a deficit exists between an individual's self-care needs and self-care abilities. Nurses need to use their knowledge and skills to deal with patients' physical and psychological stressors. The knowledge will enable patients to achieve some control in their life. The nurse's responsibility is to teach the participants a basic knowledge of cancer, a knowledge of

coping strategies, and increase their awareness of available support systems (Fredette & Beattie, 1986).

Braden et al.'s (1990) study " Nurse Intervention Promoting Self-Help Response to Cancer" was designed to address the need to understand more about the process of learning a self-help response to facilitate provision of interventions that increase the efficiency of learning self-help response. Haug and Lavin stated that individuals having long term experience with a given illness "have learned, often through trial and error what works best for them and treat themselves accordingly" (1983, p.22). Haug's findings indicated that most persons with a chronic illness learn how to deal with their illness experience and their day-to-day life changes (1983).

Summary

In the United States, the incidence of breast cancer has increased becoming the major leading form of cancer and the second leading cause of death from all forms of cancer in women. The five-year survival rate for breast cancer has also increased from 78% in 1940s to 91% in 1991. The increase in incidence combined with the increased five-year survival rate has caused an increase in the breast cancer population and their need for treatment. The significance of this study is that it examined types of nursing care

interventions for the increasing number of patients with breast cancer in the United State.

The purpose of this study was to perform a secondary analysis of data to explore nurse interventions which promote self-help response to breast cancer and to compare different types of nursing interventions (self-help, independent study, and individual contact with a nurse case manager). Finally, this study examined the relationship between demographic variables, personality variables, and treatment characteristics of breast cancer patients and their nursing interventions and health outcomes.

CHAPTER II

LITERATURE REVIEW

In this chapter, information from the literature about breast cancer and the concepts of demographic variables, personality variables, information seeking style, nursing intervention, and self-help are presented.

Demographic Variables and Breast Cancer

According to much of the research, women who undergo such highly stressful treatments as mastectomy, radiation therapy, and chemotherapy seem to have been affected in their physical and psychosocial functioning and adjustment. At the same time, in most studies patients were also affected by other independent factors such as age, education, income, social support systems, and marital status. Different types of treatment and information seeking style also influence the psychosocial well-being, mental health, and physical function of the patient (Vinokur, Threatt, Caplan & Zimmerman, 1989; 1990) and self-help behaviors (Hanucharurnkul, 1988).

Age

Vinokur et al., (1989) examined a sample of 349 women with breast cancer. They indicated that age, time in life that the breast cancer was diagnosed, and the severity of

the breast cancer had an effect on patient adjustment. Cancer that has been in existence for a longer time period and severe cases of breast cancer appeared to produce particularly serious difficulties in the psychological adjustment of younger patients, and particularly serious medical problems and physical difficulties in adjustment for older patients.

In 1990, Vinokur et al., examined a sample of 274 breast cancer patients comparing their age and the interaction of extensiveness of surgery received with their physical and psychological problems. Findings indicated that patients with more extensive surgery had a significantly higher level of symptoms, with greater limitation of physical activities for older patients. With less extensive surgery, younger patients manifested a significantly higher rate of psychological symptoms with fewer limitations than older ones. The findings indicated that cancer in younger patients was exacerbated by the impact of impairment of mental health (anxiety, depression, and somatic complaints); that is, the more seriously impaired younger patients experienced significantly greater deterioration in their mental health and well-being than similarly impaired older patients. In contrast, cancer in older patients was exacerbated by the impact of more

extensive surgery or symptoms that produced limitations in activity.

Vinokur et. al.,(1989) also demonstrated that older age was associated with increased social activities and contacts, with better mental health, perceived quality of life, and functioning than younger age. They also found that younger women (64 years or younger), with a more recent diagnosis (less than 5 years) experienced a marked increase in anxiety and depression and a sharp decrease in morale when compared to the level of these variables in counterparts of the same age with a diagnosis over 5 years. In contrast, the older women were not affected by how long they had cancer.

The Cassileth, Zupkis, Sutton-Smith and March,(1980) study examined a sample of 256 cancer patients' attitudes toward information to find out what factors affect patients' participation in medical decisions. Significant age trends were found. The younger patients preferred to be well-informed participants. They wanted as much information as possible, good and bad. The older the patients, the less likely they were to prefer to have information and to participate in medical decisions.

Hopkins (1986) examined a sample of 38 women receiving outpatient chemotherapy for primary or recurrent breast cancer. He found a statistically significant negative

relationship between age and information-seeking; that is, the older the patient the less likely she was to seek information about her condition.

Lenz (1984) identified that major background variables could influence information seeking behavior. Age has been found to negatively correlate with search for information, perhaps because older patients had larger stores of information in memory and less energy to expend information seeking and might have less access to personal and impersonal information sources than younger patients. Furthermore, the elderly were least likely to seek information.

Education

Vinokur et al., (1989) examined a sample of 349 women with breast cancer. They stated that education had a significant relationship with the adjustment of mental health and psychological well-being, which in turn had a strong positive effect on internal control orientation, involvement, and perceived health. Also, highly educated patients preferred to participate in treatment decisions (Cassileth, et al., 1980).

Hanucharurnkul (1988) analyzed data of 112 cancer patients. She found that people with more education were able to understand more about their health state and

treatment. Highly educated patients were also more able to use available resources to meet their needs.

Feather and Wainstock (1989) examined data of 613 breast cancer patients who had a mastectomy. They found that more education and social support resources (spouse, family, and friends) are available to help women make informed decisions about treatment and to adjust emotionally and physically.

Income

Information found in the literature indicated that how quickly patients in the advanced stages of the disease sought medical attention for symptoms depended on their socioeconomic condition; that is, higher socioeconomic groups delayed seeking treatment for significantly shorter periods than those from lower socioeconomic groups (Robers, 1988; Steele & McBroom, 1972). Vinokur et al.'s, (1990) findings indicated that income was significantly related to adjustment to physical symptoms and impairment and to the stage of breast cancer disease. The results also indicated that lower income was significantly related to higher level of perceived threat from the current health condition, with a greater number of diagnosed conditions, with symptoms that produced activity limitations, and with greater difficulties in mobility. Hanucharurnkul (1988) also found that people of higher socioeconomic status had more resources available

to them to facilitate engagement in self-care action. Bloom (1982) reported that women with breast cancer and higher socioeconomic status had a higher self-concept. In addition, those in a higher socioeconomic bracket had more opportunity to accept higher education, and could be given more information to promote their ability to cope and to increase their self-esteem.

Marital Status

Social support appears to be a crucial aspect of a patient's coping ability. Support resources include the patient's partner, family, friends, and caregivers (Bloom & Spiegel, 1984). They may act as care agents to facilitate the patient's self-care efforts (Orem, 1985) to improve quality of life. In fact, this support seems to be an important factor in adjustment (Lindsey, Norbeck, Carrieri & Perry, 1981), because it involves sharing information, problem-solving, and assisting with communication regarding fears and concerns (McEvoy & McCorkle, 1990). Family and friends can help women deal better with depression following a mastectomy (Woods & Earp, 1979), decrease fears of cancer recurrence (Northouse, 1981), and positively affect their outlook on life (Bloom & Spiegel, 1984).

Marital status is the major factor in social support resources. It has been documented that being married influences the patient's degree of improvement, that is, the

patient's ability to adjust to the stressors, effectively buffer physical complications and postmastectomy depression, and lessen fear of disease recurrence (Feather & Wainstock, 1989; Morris & Royle, 1988; Northouse, 1988; Penman, Bloom & Fotopoulos, 1986; Woods & Earp, 1978).

Supportive spouses can help women with breast cancer to perceive their disease, to facilitate coping efforts, and to lessen the degree of reaction to stressors (House, 1981; Hubbard, Muhlenkamp & Brown 1984). In other words, when support is inadequate, the patient's ability to cope effectively will diminish (Pearlin & Schooler, 1978).

Widows and women who are separated or divorced are more likely to have difficulty adapting to breast cancer, and more likely to feel isolated (Smith, Redman, Burns, & Sagert, 1985). Smith, Redman, Burns and Sagert's (1985) studies indicated that for married women with breast cancer, the spouse (or partner) was the most important source of social support (87.7%), followed by friends (81.4%), relatives (78.6%) and children (73%). For widowed women the most support came from children (92.8%) and friends (57.2%). The separated or divorced patient's resources were friends (84.5%), and children (53.8%), and the single women's resources were relatives (79%), and friends (73.1%). They also found that divorced or separated women experienced more feelings of isolation and loneliness

than the other two groups. Married (14.5%) and single (15.8%) women were less likely to feel isolated or alone than were widowed (21.4%), separated or divorced women (23.1%). Evidently, the effect of marital status when associated with adjustment to a mastectomy and a reduction of its accompanying stresses is such that the husband was the most important member of the support network for married women (Smith et al., 1985). In addition, married patients also had a significantly lower risk of suicide (Chatton-Reith, 1990), shorter delay in seeking treatment (Neale, Tilley and Vernon, 1986), and higher survival rates from breast cancer than non-married women (Neale et al., 1986; Goodwin et al., 1987). Hanucharurnkul (1989) and Hubbar (1984) also found that marital status had a higher significant correlation to self-care action than unmarried status.

Treatment Characteristics

Type of Surgery(s)

Breast cancer treatment often includes surgery followed by therapy consisting of chemotherapy, radiotherapy or hormone therapy. Surgical treatments are biopsy, radical mastectomy, modified radical mastectomy, quadrantectomy, subcutaneous mastectomy, simple radical mastectomy, partial

mastectomy, local excision (lumpectomy), and axillary node resection (Redfield & Molbo, 1991).

A variety of illnesses and treatments will affect the patient's psychological adjustment (Taylor, 1985; Vinokur et al., 1989, 1990) and physical adjustment (Dodd, 1984; Vinokur et al., 1989, 1990). Taylor (1985) reported that a poor prognosis and more radical surgery will produce poor psychosocial adjustment. Furthermore, it was found that the various types of surgery significantly affect patients' emotional adjustment, concern with body disfigurement, change in marital affection, and change in sexual intercourse; thus, the lumpectomy patients showed better adjustment than simple or modified radical mastectomy patients, and the Halsted radical mastectomy patients demonstrated the worst adjustment of all.

Sanger and Reznikoff (1981) studied 20 women who underwent a lumpectomy and 20 women who underwent a modified radical mastectomy. They found significant differences, i.e., the mastectomy women experienced more body disturbance, anxiety, psychological adjustment, and marital satisfaction than lumpectomy women (Steinberg, Juliano & Wise, 1985). They also compared lumpectomy and modified radical mastectomy patients. The findings revealed that mastectomy patients showed more anxiety, depression, and adjustment problems than lumpectomy patients.

Many studies found that the more radical surgery will produce physical disability (Meyerowitz, 1983; Taylor, 1985) and interfere with normal social life and marital relationships (Jamison, Wellisch & Pasnau, 1978; Silberfarb, 1980) and impair the quality of life (Ehlke, 1988; Meyerowitz, 1983; Taylor, 1985). Generally speaking, about 20% to 30% of patients have severe mood disturbance or depression one to two years after surgery (Knobf, 1986; Vinokur, 1989). In addition, Margolis, Carabell and Goodman (1983), Ward, Heidrich and Wolberg (1989), and Wellisch (1987) found that patients who had chosen the breast-conserving surgery felt significantly more sexually desirable and thought that their bodies looked integrated (body image). However, some women would rather choose the radical surgery because of their concerns about radiotherapy side effects, recurrence, inconvenience, and efficacy (Ward, Heidrich & Wolberg, 1989).

Type of Treatment(s)

Generally speaking, post-surgery breast cancer women often have a combination of radiation, chemical, and hormone therapies. Radiation therapy can produce physical distress such as fatigue, discomfort, nausea, rib fractures, and burning of the skin. Chemotherapy also produces fatigue, stomatitis, bone marrow suppression, nausea, vomiting, hair loss, skin change, reduction or loss of mobility, change in

bowel pattern, appetite, insomnia, and weight change (Knobf, 1986).

The psychological distress of chemotherapy produces anxiety, depression about the uncertainty of survival, a worried outlook, a less happy mood, and difficulty concentrating, anger, hostility, financial burden, change in appearance, sexual problems, role change and even greater use of alcohol and tranquilizers, thoughts of suicide, and disruption of daily activities (Knobf, 1986; Meryerowitz, 1986; Spiegel, 1990). In addition, when patients receive even more chemotherapy, it can produce more psychological and emotional distress (Knobf, 1986).

Hughson and Cooper (1982) discussed the relationship between psychological symptoms and adjuvant therapy for breast cancer patients into three groups: those receiving radiotherapy, those receiving chemotherapy (CMF), and those receiving both radiotherapy and chemotherapy. They found no significant difference among the groups at three and six months after surgery, but by 13 months the chemotherapy groups were showing a marked excess of psychological symptoms, and these symptoms persisted until 24 months, and even after the treatment had finished.

Comorbidity

Comorbidity is defined as the number and types of chronic diseases other than the breast cancer such as arthritis, heart disease, hypertension, cataracts, nervous condition, and diabetes mellitus (Yancik & Yates, 1989). Comorbidity can cause functional limitations and disabilities in breast cancer patients (Yancik & Yates, 1989). Comorbidity conditions are commonly reported by women with breast cancer. Slightly more than 40% of the women with breast cancer reported one or more limiting health conditions (Yancik & Yates, 1989). Some investigators have argued that survival following cancer is probably more strongly related to the presence of comorbid conditions than to the stage of the cancer at the time of diagnosis (Patterson, 1983).

Satariano, Ragheb, and Dupuis (1989) reported on the effects of comorbidity in older women with breast cancer. They examined 463 women diagnosed with breast cancer. They found that comorbidity was negatively associated with the quality and duration of survival and affected 40% of middle-aged and elderly women with breast cancer.

Much research indicates that the severity of the comorbid condition, defined as the expected mortality rate for people diagnosed with the condition, is prognostically related to subsequent cancer survival. Those cancer

patients with severe comorbid conditions have poorer survival rates than those with moderate or no comorbid conditions (Wells, Stoller, Feinstein & Horowitz, 1984). In addition to focusing on the prevalence of comorbidity, it is necessary to identify specific combinations of health conditions concurrent with breast cancer. There are a variety of comorbidity conditions such as arthritis, heart disease, and hypertension which affect patients' health problems and require different treatments (Centers for Disease Control CASH study, 1983).

Moskowitz and Haug (1986) found that a comorbid condition such as arthritis will affect women's quality of life. They stated that arthritic pain or resulting loss of function can interfere with family and social life, and lead to feeling of hopelessness and depression. Although arthritis is not a primary cause of death, it may compromise or adversely affect the survival of women with breast cancer. It may be, for example, that arthritis, together with breast cancer, may inhibit mobility, compromise a patient's ability to function independently, and perhaps increase the risk of death (Moskowitz & Haug, 1986).

Information Seeking Style

A variety of coping responses occur when patients receive therapy. Seeking information is one type of coping

response that patients use to learn more about their diagnosis and treatment (Cohen & Lazurus, 1979; Friedman, 1980; Hopkins, 1986).

Many factors can aid patients to make an informed decision, such as information, and appreciation of one's own value (Valanis & Rumpler, 1985). Information seeking behavior has been viewed as important for the patient's information and knowledge resources, and can affect the patient's values and decision making process. DeVito, Bogdanowicz and Renzikoff (1982) stated that information-seeking was an important first step in the sequence of steps that ultimately enhance the overall health of the individual.

However, Scott and Eisendrath (1985/1986) indicated that information seeking was only a moderately effective coping strategy. It may produce situational relief but may not provide any enduring effects. If the patients do not want to confront the problem, high information resources would produce more dangerous anxiety than low information (Miller & Mangan, 1983). Much research discusses whether high or low information benefits the patient's coping style.

Miller and Mangan (1983) investigated gynecologic patients. They used heart rate frequency as an index of physiologic arousal (anxiety); that is, the higher the pulse, the higher the anxiety. The results indicated that

informed patients have higher pulse rates than uninformed patients. The monitors (information seekers) with a low level of information and blunters (information-avoiders) with a high level of information had the highest pulse rate (anxiety). The lowest pulse rate (less anxiety) was found in the monitors (information-seekers) with the highest level information. Additionally, a Miller and Mangan study also demonstrated that a large amount of information may actually magnify patient distress, with these patients displaying higher levels of depression, tension, and dismay when preparing for a gynecological examination. After the examination was completed, the high information patients demonstrate decreased tension, but the depression remained and patients continued to demonstrate increased levels of discomfort above levels shown by the low information group. Therefore, how well health workers handle individual differences in coping style and specific properties of each patient's situation appear to determine how well people cope.

Hopkins (1986) examined 58 women with primary or recurrent breast cancer. Of the patients seeking verbal information about their disease and treatment, 53.45% sought it from oncologists, 50.00% from health professionals or patients on television programs, 39.66% from oncology nurses, 25.86% from family members, and 22.41% from friends.

The sources of written information were, in order from the most to least used, the oncologist or nurse in the office (39.66%), newspapers (31.03%), magazine articles (29.31%), popular books about cancer (20.69%), cancer organizations (12.07%), hospital personnel (6.09%), and radiation center personnel, surgeons, and friends (5.17%). Hopkins (1986) indicated that breast cancer patients have many learning needs that can be met by nurses. Therefore, nurses need to become even more skillful in assessing patients' deficits, and provide the appropriate information resources for patients. Efforts should continue to teach breast cancer patients stress management, but the information should be provided in a way that recognizes individual differences in preference for treatment information and nursing intervention (self-help class, independent study, and individual contact with nurse case manager).

Self-Help Class

This study concerns the self-help class which enhanced patients' enabling skills which are defined by problem-solving skills, cognitive reframing skills, abilities to delay gratification, and abilities to believe in themselves (Rosenbaum, 1983). Enabling skills can reduce disruptive reinforcers (uncertainties) and smooth the execution of desired behaviors (Rosenbaum, 1983). Furthermore, enabling

skills can reduce or minimize the interfering effects of the reinforcers on the patients' self-sufficiency. Enabling skills will directly affect self-reliance; that is, the greater the self-help enabling skills, the more independent the patient, and the higher the quality of life (Braden, 1986; 1990).

Rosenbaum and Palmon (1984) studied both patient helplessness and resourcefulness in coping with epilepsy. They found that patients in the high resourcefulness categories were significantly less depressed and anxious and could cope better with their disability than low resourcefulness subjects. The more resourceful they may be in using various cognitive and behavioral skills, the less the emotional impact of uncontrollable events. In other words, highly resourceful individuals are more capable of regulating their emotional reactions. Rosenbaum conducted another study in 1985, examining learned helplessness and learned resourcefulness. He discovered that patients who learned resourcefulness were more capable of self-regulation. A high score on self-help resourcefulness meant individuals had high self-help skills, cognitive and self-instruction, to cope with their emotional and physiological responses. They could plan, define problems, evaluate alternatives and anticipate consequences. They also could use problem-solving strategies and were able to delay

immediate gratification and believe in their ability to self-regulate internal events.

In addition, some researchers demonstrated that a high self-resourcefulness score was related to coping with laboratory pain (Rosebaum, 1980) as well as with clinical pain (Courey, Feuerstein, & Bush, 1982). High resourcefulness seasick sailors showed fewer performance deficits in a stormy sea than low resourcefulness seasick sailors (Rosenbaum & Rolnick, 1983). High resourcefulness was found to be related to success in a weight-reduction program (Smith, 1979), and to curbing nail biting (Frankel & Merbam, 1982). Rosenbaum & Ben-Ari (1985) studied patients with high resourcefulness. They showed more positive self-evaluation and more task-oriented thoughts than the low resourcefulness patients. The also revealed more negative self-evaluations. The literature indicates that learned resourcefulness is very important and will affect an individual's ability to deal with stressors.

Enabling skills are closely related to learned resourcefulness and the information gained from health professionals. Health care providers must provide information and educate patients in self-help. Providers should focus on finding the stress stimuli and then positively modifying and reducing the negative situation by giving supporting resources (Green, 1985). Potential

outcomes include changes in physical and psychological stresses, improvement in coping strategies, reduction in patient dependence, and improvement in health.

Independent Study

Patients have the right and duty to participate individually or collectively in the planning and implementation of their health care (Ahluwalia, 1985). In other words, patients have the right to choose their own learning methods. Health educators should support patients with learning resources even if patients choose independent study for information (Green, 1985).

Nurse Case Manager

Woll, Guadagnoli, Thomas and Mor (1989), investigated the concrete needs of 413 patients receiving chemotherapy. They found that patients had unmet psychologic and physical needs during the therapy period. Therefore, they devised a short-term (12 week) educational case management intervention program aimed at developing mastery and autonomy in patients with cancer. The case manager assessed patients' needs, provided information and assisted the patients to access needed resources.

The case manager can use telephone interventions to follow up on health care, and also determine any unmet needs

(Christ & Seigel, 1990). Christ and Seigel (1990) used the telephone outreach to examine 167 cancer patients who were undergoing chemotherapy. Of the 206 needs reported, 77% of these needs were met with a follow-up phone call (Christ & Siegel, 1990). In other words, telephone contact can be used to guide the case manager in finding whether the nurse intervention fits with the patient's self-help needs.

Self-Care in Cancer Patients

Orem (1985) regards patients who participate in self-care as already having some knowledge and skill ability, and having acted on their own behalf to maintain life, health, and well-being. Health professionals should build on that knowledge and supplement it by promoting the individual's practices and capabilities. Furthermore, the nurse agency is required when a deficit exists between an individual's self-care needs and her self-care abilities. The nurse provides more resources to eradicate this deficit.

Dodd (1988) showed that patients who received proactive side-effect management information reported more self-care behaviors. The self-care prevented potential side effects and alleviated the experienced side-effects of chemotherapy.

Meriney (1990) applied Orem's self-care conceptual framework to breast cancer patients with hypercalcemia. She indicated that hypercalcemia frequently occurred in women

with breast cancer, and its acute onset can be life threatening. It is, therefore, essential to alert the patient and family to self-care measures that could potentially obviate this dangerous condition. She emphasized that the client's use of self-care management was significant because early recognition, prevention, and appropriation of nursing interventions and education could eliminate death or disability.

Other studies have shown that the self-care behavior of cancer patients during the treatment process will influence the treatment outcome (Dodd, 1988). The Dodd experimental study of 30 patients noted that chemotherapy will produce physical and psychological side effects, but some psychological symptoms, such as insomnia, nervousness, irritability, inability to concentrate, and anxiety, are not absolutely attributed to chemotherapy (Spieberger, 1979). Symptoms may be attributed to a potential uncertainty about the threatening reaction. She indicated that the initial self-help behavior knowledge became very important because patients could better handle their symptoms and control the stress of uncertainty, thus taking individual responsibility for their treatment's success.

Many oncology health professionals have observed that psychological, social, and learning variables can influence the medical outcome and quality of life of cancer patients

(Siegel, 1990). Some patients' attitudes and perceptions of their own functioning may be shaped by the "learning" groups they may belong to or aspire to join (Van den Brone, 1986). Classes can provide information about coping with breast cancer and what one can expect; tips on solving arising problems; exercises in scaling so that patients want to do what they can do; taking care of oneself; and avoiding negative thoughts (Braden, 1986).

Van den Borne, et al. (1986) reviewed the findings from six studies that examined the effect of patients' contacts in participation in self-help groups. Breast cancer patients showed positive benefits from self-help interaction including: (1) more knowledge about breast cancer and arm care after the mastectomy, a wider range of motion in the affected arm, a better technique of breast self-examination, and greater use of a prosthesis (Stecchi, 1979); (2) greater decrease in negative feeling (anxiety, tension, fatigue and confusion) and in inadequate coping responses (drinking, smoking) and in experiencing phobias (Spiegel, Bloom & Yalom, 1981); (3) fewer disturbances in body image (Farash, 1978); and (4) stronger improvement in general health perception (Vachon, Lyall, Rogers, Crochane & Freeman, 1982) (p. 367).

Roger, Bauman and Metzger (1985), surveyed 625 women with breast cancer, and found that 90% of those involved in

peer patient contact programs were helped. The women found the self help group to be a positive experience and were able to communicate about breast cancer, which heightened their sense of self-awareness (Euster, 1980), developed a sense of meaning in life, and helped face death realistically without denial (Spiegel & Yalom, 1978). In 1987, Van den Brone et al., found that breast cancer and lymphoma patients who had contact with fellow patients experienced a decrease in negative effects (i.e., depression, anxiety and psychological complaints). Their self-esteem was enhanced and feelings of uncertainty were decreased. Another research reported the significant potential value of self-help patient volunteer programs that can make patient participants feel helpful to others. Such programs can further suggest successful coping strategies for others and provide information and experience through shared patient status (Christ, Bowles & Bauman, 1987).

Braden (1990) also found that the self-help class made a positive significant contribution to self-help. Self-help was strongly related to quality of life. Her findings support continued involvement of nurses in self-help education which could provide direction for patients who wish to improve their self-help skills and to promote their own life quality.

Nursing Role with Breast Cancer Women

In the aforementioned literature, many factors were found to affect self-care, self help, and health outcomes. These factors can guide nurses in promoting classes for women with breast cancer as they cope with overwhelming feelings of fear, anxiety, hopelessness, and helplessness in the different cancer stages. During this time, the nurse's role should be to help patients relieve or reduce the physiological and psychosocial stresses and to assist them to cope with the stress and threatening events of the learning process (Clarke, 1984).

Fedette and Beattie (1986) indicated that education programs including didactic presentations, audiovisual aids, small group and total group discussion, and library materials, were significant learning resources for patients to be knowledgeable about cancer. They examined 34 patients who participated in the educational program. Knowledge of coping strategies and knowledge of supports increased after the education program. Patients evaluated the education programs positively. They agreed that the education programs increased their ability to cope with their disease. Nurses must understand the coping process and how to intervene and support that process (Fredette & Beattie, 1986).

Watts (1989) found that a "Coping With Cancer Course" reasserted the individual's self-worth and restored personal perception of self-control in 29 persons with cancer. He found that numerous families confronted with the cancer experience could share their learning experiences and help each other to reduce psychosocial stress. The results also showed that since the individual's stay in hospital was limited, community health nurses have an important role and serious challenge during the rehabilitation period.

Watts (1989) indicated that nurses should provide professional information on the illness process and explain the treatment processes. Nurses should also have more opportunity to contact patients so that they can identify and relate to the patients' needs and give effective continuity of care. Nurses should have well-developed communication and interpersonal skills. Nurses must have flexible and versatile resources, capable of response to the diverse physical and psychosocial implications of cancer, including holistic health care for patients. Moreover, nurses assume many roles in dealing with cancer: educator, advocate, crisis resolver, referrer, interpreter, advisor, buffer between the patients and other health providers, decision maker, and colleague (Rabinowitz, 1987).

Summary

In this chapter, the literature relative to the study was reviewed. The demographic variables, treatment characteristics, comorbidity, and personal information seeking style can influence learning abilities. The different types of nursing interventions also can affect the health outcome (self-help). Literature support was found for application of a self-help model to increase the patient's self-help and self-care ability through nursing interventions. These interventions are a self-help class, independent study, and case manager contact. The role of nurses is to decrease patients' hopelessness, uncertainty, loss of control, negative body image, and negative thoughts and to increase self-care ability, problem solving, and coping abilities to effect health outcomes of breast cancer patients.

CHAPTER III

METHODOLOGY

The design of the study, the setting and sample criteria, the protection of human subjects, and the instrumentation are described in this chapter. The method of data collection and the method of data analysis are also presented.

Research Design

The present study, the secondary analysis of the initial data from the Self-Help Intervention Project (SHIP) pilot study document, used a descriptive correlational design. The results describe the type of women with breast cancer who participated in the three methods of nursing interventions. The study is also proposed to demonstrate the relationship between demographic variables, treatment characteristics, co-morbidity variables, and personality variables and nursing interventions (self-help class, independent study, and individual contact with nurse case manager). Health outcomes (self-help) after completing different types of the nursing interventions (self-help class, independent study, and nurse case manager) are also described.

Sample and Setting Criteria

The data for the secondary analysis were selected from consenting individuals who participated in the pilot study of the Self-Help Intervention Project for women with breast cancer. These subjects were referred by professional colleagues in different oncology settings. The primary referral sites included a health maintenance organization, a regional cancer center, and several hematology/ oncology and radiation/oncology private practices.

The SHIP interventions are based on theories of learned resourcefulness (Rosenbaum, 1983) and learned response to chronic illness (Braden, 1990), and are implemented through self-help classes and self-help independent study programs (Rosenbaum, 1985), as well as in the form of individual contact with a nurse case manager. Braden et al., (1990) described the interventions of the self-help class and the self-help independent study program as organized into six, 90-minute lesson plan. Content is focused on activities that build problem-solving skills, reprioritizing abilities, cognitive reframing skills, and belief in self. The nine hours of instruction include two and a half hours of belief in self activities, two hours of problem-solving activities, one and a half hours of cognitive reframing activities, and one hour of prioritizing activities. The remaining two

hours include introduction, stretch breaks, and closing/evaluation.

Problem-solving activity is social relationships asking for help and relationship with health-care providers. Prioritizing activity is one part of energy conservation. Cognitive reframing activity is directed toward communication patterns, particularly positive and negative self-talk. Self-belief activity includes developing skills in relaxation exercises and in the use of resources, a sense of ability to share things that work, and confidence in the level of knowledge about cancer and its treatment (Braden, et al., 1990, p. 18).

The pilot sample consisted of 29 women who were recently diagnosed with breast cancer and began receiving a course of treatment for breast cancer. Data were collected from 29 women at time one, before participation in a nursing intervention. Data were collected at time two, after participation on 26 women. The criteria for the original selection of subjects were:

1. Subjects recruited were women between the ages of 20 to 75 years of age.
2. Subjects had a diagnosis of breast cancer and were entering a treatment regimen.
3. Subjects recruited would be fluent in English.

Human Subjects

The SHIP study had been approved by the University of Arizona Human Subjects Committee and the project was exempt from review (Appendix A). The secondary data analysis study was also approved by University of Arizona College of Nursing Ethical Review Committee (Appendix B).

The recruitment procedure included an initial contact at the treatment sites identifying women who met the study criteria. The Field Coordinator or Field Worker personally contacted the women and introduced the study.

The coordinator explained that the project involved completing instruments and for subjects to be willing to participate in self-help classes, voluntary independent study, or voluntary weekly contact with a nurse case manager. Potential subjects were assured that their participation was voluntary; that there were no hazards or costs beyond the time involvement; that they could withdraw at any time; that their questions would be answered, and that all information would be treated with anonymity and confidentiality.

Only those persons on the collaborative research team and staff had access to the data. All data were kept confidential through use of a subject number. No identifying information was kept with the data, which were

stored in a locked file and shredded as the data were entered and stored on a computer tape.

Data Collection Instruments

Demographic Characteristics (DC)

These data were collected by means of a demographic data form (Appendix C). They included age, education, income, and marital status.

Treatment(s) Characteristics

These included surgery, chemotherapy, radiation therapy, and hormone therapy. There were listed numerically by different categories. The data were part of the demographic information form (Appendix C).

Co-morbidity

This designates the patients who had breast cancer combined with other kinds of diseases (Appendix C). It was measured by counting the number of other chronic illnesses listed by subjects in response to a single items included on the demographic sheet.

Information-Seeking Style (ISS)

This was measured by using the instrument adapted from Miller and Mangan (1983). The responses to this 16 item visual analogue instrument were grouped into each of two subscales: Monitors and Blunters. The individual subjects' scores were determined by totaling the monitor score and the

blunter score from each subscale. Endpoints of the 10 centimeter unmarked response line were " True about me" and "Not true about me" (Appendix D).

Cronbach's alpha estimated the internal consistency reliability and standard items for the Information Seeking Style Scale. The monitoring subscale had an internal consistency reliability coefficient of 0.73 and standard item coefficient of 0.72. The blunting subscale had an internal consistency reliability and standard item coefficient of 0.63 (Braden, personal communication, December 10, 1990). The purpose of the instrument was to identify blunTERS and monitors in information seeking style.

Inventory of Adult Role Behavior (IARB)

The IARB is a 42 item scale adapted from Given's (1984) Effect Scale measuring social psychological health states of ambulatory chronically ill patients. Items number 1 to number 23 index self-help behavior. Items number 24 to 42 index adult self-care.

All items use a visual analogue form. Endpoints of a 10 centimeter unmarked response line are " least possible level" and "highest possible level". Items numbered 1 to 23 in the inventory measure adult role behaviors. The scale is scored in a positive direction for self-help behaviors (Appendix E).

Items numbered 24 to 42 in the inventory measure adult self-care. These items related to activities engaged in to maintain ones's health. Endpoints of a 10 centimeter unmarked line provided for raters' responses, were "True about me" and "Not True about me". The score is in a positive direction for self care ability (Appendix E).

Braden (1990) addressed the internal consistency reliability of the IARB scale. The standardized item alpha and the omega coefficients were 0.91. Braden (1990) also demonstrated support for the predictive construct validity of the IARB instrument.

Nursing Interventions

The self-Help Intervention Project (SHIP) provided three kinds of interventions: self-help class, independent study, and individual contact with a nurse case manager.

Data Collection Protocol

Data were collected on each subject in the pilot study at two separate times. Time one data collection began at the time of the subject's entrance into the study and prior to the start of the selected nursing intervention. Time two data collection occurred six weeks after time one, and coincided with the end of the selected intervention.

A secondary analysis of data collected from the pilot phase of the SHIP project was conducted. Subjects had been

given two data collection instruments which contained an Information-Seeking Style scale (ISS) used to identify the monitor (information seeker) and blunter (information avoider) (Appendix D) and an IARB, (from number 1 to 23, used to identify self help behavior and from number 24 to 42, used to identify self care ability) (Appendix E). In addition, a Demographic Data Form (Appendix C), and a SHIP checklist for identification of learning class, independent study, and individual contact with nurse case manager was used.

Questionnaires were completed in the presence of a trained data collector or privately by the subject. The completed questionnaires were stored in a file in a locked office. A master list of subjects was maintained by the research coordinator. The data collected were entered into a computer by research assistants.

Data Analysis Plan

The data analysis plan addressed the following research questions:

1. What are the characteristics of women with breast cancer who participated in the self-help class type of intervention?
2. What are the characteristics of women with breast cancer who participated in the independent study intervention?

3. What are the characteristics of women with breast cancer who participated in the nurse case manager intervention?

Research questions one, two, and three were analyzed using collection time one data through use of descriptive statistics (central tendency). Measures of central tendency (mean, median, mode, frequencies) were used to analyze the various characteristics related to preference for self-help class, independent study, or nurse case manager.

4. What is the relationship between the demographic variables of women with breast cancer (age, education, income, and marital status) and type of intervention (self-help classes, independent study, and individual contact with a nurse case manager)?

Research question four data were analyzed by means of Pearson Product-Moment Correlation or Chi-Square statistics to determine relationships between demographic information such as age, education, and income, and types of interventions.

5. What is the relationship between the treatment characteristics of women with breast cancer and the type of intervention (self-help class, independent study, and individual contact with a nurse case manager)?

Research question five data were analyzed by Pearson Product-Moment Correlation to determine the relationship between treatment characteristics (surgery, chemotherapy, radiation, and hormone) and type of intervention (self-help class, independent study, and individual contact with a nurse case manager).

6. What is the relationship between co-morbidity of women with breast cancer and the type of intervention (self-help class, independent study, and individual contact with a nurse case manager)?

Research question six data were analyzed by means of Pearson Product-Moment Correlation statistic to determine if there was any significant relationship between co-morbidity and type of interventions.

7. What is the relationship between the information seeking style of women with breast cancer and the type of intervention (self-help class, independent study, and individual contact with a nurse case manager)?

Research question seven data were analyzed by Pearson Product-Moment Correlation statistics to determine if a relationship existed between the variables of age, marital status, education level, income, and the information seeking style score, displayed by the subject.

8. What is the relationship between type of intervention (self-help class, independent study, and individual contact with a nurse case manager) and self-help outcomes following completion of the nurse intervention?

Research question eight data of the time two collection were analyzed using the Pearson Product-Moment Correlation to compare the self-help outcome scores among the three groups of nursing interventions.

The two instruments (ISS and IARB) used in this study require demonstration of internal consistency reliability coefficients equal to or greater than the .70 criteria (Nunnally, 1978). Reliability was be addressed by

calculation of Cronbach's alpha coefficient. The level of confidence was determined to be .10.

Summary

This study was a secondary analysis, with the data provided from the pilot study of the SHIP project. The sample size for the secondary data analysis was 29 cases at time one and 26 cases at time two.

A descriptive correlational design was used to describe the women who preferred each of three nursing interventions (at time one data collection) and to explore the relationships of type of nursing interventions (self-help class, the independent study, or the nurse case manager) and self-help outcomes (at time two data collection).

A Demographic Data Form was used to collect information about age, education, income, marital status, and treatment characteristics. Two instrument scales, Information Seeking Style (ISS) and Inventory Adult Role Behavior (IARB), were used in this study. The Self-Help Intervention Project provided the data about women with breast cancer who participated in a self-help class, independent study, or contact with nurse case manager. The data analysis plan for the secondary study included descriptive and correlational statistics and use of analysis of variance.

CHAPTER IV
RESULTS OF THE DATA ANALYSIS

The secondary analysis of data for the pilot phase of the Self-Help Intervention Project (SHIP) examined the relationship between personal background (demographic characteristic, treatment characteristic, comorbidity, and information seeking style) and nursing interventions (self-help class, independent study, and nurse case manager) in women with breast cancer. Also examined were the health outcomes (self-help, self-care) after completing different types of nursing interventions. The results of the Demographic Instrument, Seeking Styles Scale, Nursing Interventions (self-help class, independent study, and nurse case manager), and the Inventory Adult Role Behavior (IARB) Scale are presented in this chapter. The results related to the research questions are also presented.

Demographic Characteristics of the Sample

A convenience sample of 29 women, whose ages ranged from 35 to 72 years old ($x=53.59$, $s.d.=11.28$), participated in the study at time one. The majority of the subjects were married ($n=19$, 65.5%); two subjects (6.9%) were separated; seven (24.1%) were divorced; one (3.4%) was single, never married. Table 1 presents the frequencies and percentages

of the educational level of the subjects. The majority (n=28, 97%) of subjects had completed at least a high school education, while 10 (34.5%) had completed a college education or professional degree. Table 2 presents the frequencies and percentages of the subjects' income level. The average family income reported by the subjects was \$30,000-\$39,000 per year. The range of family income was from less than \$10,000 per year (n=2, 6.9%) to an income greater than \$60,000 per year (n=6, 20.7%). The majority of the subjects (n=15, 51.7%) lived with husbands only. Four (13.8%) subjects lived with children only, one (3.4%) subject lived with another family, and one (3.4%) subject lived with friends. Two (6.9%) subjects lived alone. Another six subjects lived with more than one person (husband and children, or other family and friends).

Seven (25%) of the subjects worked full time, seven (25%) of the subjects worked part time, and 14 (50%) of the subjects did not work or attend school.

Treatment information is provided in Table 3. Fifteen (51.7%) of the subjects had a radical mastectomy, three subjects (10.3%) had a partial mastectomy, and 19 subjects (65.5%) had a local excision or lumpectomy. The majority of the subjects (n=20, 69%) had chemotherapy; 18 subjects (62.1%) had radiation therapy; and seven (24.1%) subjects received hormone treatment. Fifteen subjects (51.7%)

Table 1. Educational Level of Subjects (n=29)

Education	Absolute Frequency	Relative Frequency (%)
8th grade or less	0	0
Some High School	1	3.4
High School Graduate	4	13.8
Trade/Business School	3	10.3
Some College	11	37.9
College Graduate	2	6.9
Graduate/Professional Degree	8	27.6
Total	29	100.0

Table 2. Income Levels of Subjects (n=29)

Income Level	Absolute Frequency	Relative Frequency(%)
Below 10,000	2	6.9
10,000-19,999	3	10.3
20,000-29,999	5	17.2
30,000-39,999	3	10.3
40,000-49,999	5	17.2
50,000-59,999	4	13.8
60,000-69,999	6	20.7
Missing Data	1	3.4
Total	29	100.0

Table 3. Treatments Received by Sample (n=29)

Treatment	Absolute Frequency	Relative Frequency (%)
Radical Mastectomy	15	51.7
Partial Mastectomy	3	10.3
Local Excision (Biopsy)	19	65.5
Chemotherapy	20	69.0
Radiation Therapy	18	62.1
Hormone Therapy	7	24.1
Number of Treatments		
1	15	51.7
2	12	41.4
3	2	6.9
Number of Other Chronic Illnesses		
0	13	44.8
1	16	55.2

received one type of treatment only (i.e., chemotherapy, radiation, or hormone treatment). Twelve subjects (41.4%) received two types of treatment (i.e., chemotherapy and hormone therapy, radiation and hormone therapy, chemotherapy and radiation therapy), and two subjects (6.9%) received all three types of treatment. Thirteen (44.8%) of the subjects had no other history of chronic illness; 16 (55.2%) subjects reported at least one other chronic illness, besides breast cancer, e.g., arthritis, diabetes mellitus, hypertension.

Table 4 provides information on the frequencies and percentages of the various nursing interventions used in the SHIP pilot study. Ten subjects (34.5%) participated in the class intervention. Seven subjects (24.1%) participated in the independent study, and 12 subjects (41.4%) participated in the nurse case manager intervention.

Reliability of the Instruments

Internal consistency reliability of the instruments used to measure information seeking style and self-help adult role behaviors was estimated using Cronbach's coefficient alpha. Table 5 presents the standardized alpha for each instrument.

Information Seeking Style Scale has two seeking styles, those of a monitoring style (std. alpha=.52, alpha=.59) and those of a blunting style (std. alpha= .69, alpha=.69). The

Table 4. Nursing Interventions in Self-Help Intervention Project (SHIP) Pilot Study (n=29)

Intervention	Absolute Frequency	Relative Frequency(%)
Self-Help Class	10	34.5
Independent Study	7	24.1
Nurse Case Manager	12	41.4
Total	29	100.0

Table 5. Instruments' Alpha and Standardized Alpha

Instrument	Alpha	Standardized Alpha
ISSM	.59	.52
ISSC	.69	.69
IARB	.92	.92
IARC	.74	.82

Note. ISSM=Information Seeking Style Monitor Subscale
 ISSB=Information Seeking Style Blunter Subscale
 IARB=Items Numbered 1 to 23 (Inventory Adult Role
 Self-Help Behavior)
 IARC=Items Numbered 24 to 42 (Inventory Adult Self-
 Care)

Inventory Adult Role Behavior Scale also has two subscales. Items number 1 to number 23 index the self-help behavior (std. alpha=.92, alpha=.92). Items number 24 to 42 index adult self-care (std. alpha=.74, alpha=.82).

Findings Related to the Research Questions

Pearson correlation coefficients and Chi-Square were calculated to determine the relationship between the major conceptual variables, personality variables, and nursing intervention, and health outcomes (self-help and self-care behaviors). The level of significance was set at .10.

Research Question 1

What are the characteristics of the women with breast cancer who participated in the self-help classes intervention? Results are presented in Table 6 according to the rank ordering of the data. In this study, 10 subjects were in the self-help class. Their ages ranged from 35 to 63 years (\bar{x} =50.4, s.d.=3.4).

Regarding the educational level, two subjects (20%) were high school graduates. Two subjects (20%) had gone through trade/ business school. Four subjects (40%) had had some college and two subjects (20%) were college graduates. The average educational level for the self-help group ranked equal to or higher than trade /business school (80%).

Table 6. Frequencies of Women With Breast Cancer in the Self-Help Class Intervention (n=10)

Variables	Absolute Frequency	Relative Frequency (%)
Education		
8th grade or less	0	0
Some high school	0	0
High school graduate	2	20
Trade/Business school	2	20
Some college	4	40
College graduate	2	20
Graduate or professional degree	0	0
Marital Status		
Married	7	70
Separated	1	10
Divorced	2	20
Widowed	0	0
Single/never married	0	0
Gross Family Income		
below 10,000	2	20
10,000-19,999	1	10
20,000-29,999	1	10
30,000-39,999	0	0
40,000-49,999	4	40
50,000-59,999	0	0
60,000 & above	2	20

Table 6 (Continued)

Variable	Absolute Frequency	Relative Frequency(%)
Type of surgery(s) (can check one more item)		
Radical mastectomy or Modified radical	7	70
Partial mastectomy	0	0
Local excision (lumpectomy)	6	60
Type of treatment(s) (can check one more item)		
Chemotherapy	9	90
Radiation therapy	7	70
Hormone therapy	1	10
Number of treatment(s)		
One	4	40
Two	5	50
Three	1	10
Comorbidity		
0	6	60
1	4	40

As for marital status, seven subjects (70%) were married. One subject (10%) was separated and two subjects (20%) were divorced in the self-help class.

Concerning the gross family income, two subjects (20%) had incomes below \$10,000. One subject's (10%) income was \$10,000-19,999; one subject's (10%) income was \$20,000-29,999. Four subjects' (40%) were \$40,000-49,999 and two subjects' (20%) were \$60,000 and above. The average income of the subjects was higher than \$39,999.

With respect to the surgeries, seven subjects (70%) had had a radical mastectomy or a modified radical mastectomy, and six subjects (60%) had had local excision (lumpectomy). As to treatment, nine subjects (90%) received chemotherapy, seven subjects (70%) received radiation therapy, and one subject (10%) received hormone therapy. In addition, four subjects (40%) had one type of treatment, five subjects (50%) received two types of treatment, and one subject (10%) received three types of treatments.

In the self-help class, six subjects (60%) had no other chronic illness and four subjects (40%) had other chronic illnesses.

For information seeking style, the average monitor style score (ISSM) was 68.69 (s.d.=18.16). The average blunter style score (ISSB) was 36.38 (s.d.=26.90).

Research Question 2

What are the characteristics of women with breast cancer who participated in the independent study intervention? Results by rank ordering of the data are presented in Table 7. Seven subjects participated in the independent study intervention. Their ages ranged from 37 to 71 years ($n=7$, $\bar{x}=51.6$). As to the educational level, one subject (14%) was a high school graduate, one subject (14%) had gone to trade/business school, three subjects (43%) had had some college, and two subjects (29%) were graduates or had professional degrees. The average length of subjects' education was equal to or higher than some college level (71%). In regard to the marital status, three subjects (43%) were married, and four subjects (57%) were divorced.

As to gross family income, one subject's (14%) income was \$10,000-19,999. Two subjects' (29%) income was \$20,000-29,999. Two subjects' (29%) income was \$30,000-39,999; one subject's (14%) was \$40,000-49,999; and one subject's (14%) was \$50,000-59,999. The average income of the subjects was between \$20,000-29,999 and \$30,000-39,999.

Three subjects (43%) had radical or modified radical mastectomies. Two subjects (29%) had partial mastectomies, and four subjects (57%) had local excisions (lumpectomy). Regarding treatment, four subjects (57%) received chemotherapy, four subjects (57%) received radiation

Table 7. Frequencies of Women With Breast Cancer in the Independent Study Intervention (n=7)

Variables	Absolute Frequency	Relative Frequency(%)
Education		
8th grade or less	0	0
Some high school	0	0
High school graduate	1	14
Trade/Business school	1	14
Some college	3	43
College graduate	0	0
Graduate or professional degree	2	29
Marital Status		
Married	3	43
Separated	0	0
Divorced	4	57
Widowed	0	0
Single/never married	0	0
Gross Family Income		
below 10,000	0	0
10,000-19,999	1	14
20,000-29,999	2	29
30,000-39,999	2	29
40,000-49,999	1	14
50,000-59,999	1	14
60,000 & above	0	0

Table 7 (Continued)

Variable	Absolute Frequency	Relative Frequency (%)
Type of surgery(s) (can check one more item)		
Radical mastectomy or Modified radical Partial mastectomy	3	43
Local excision (lumpectomy)	2	29
	4	57
Type of treatment(s) (can check one more item)		
Chemotherapy	4	57
Radiation therapy	4	57
Hormone therapy	3	43
Number of treatment(s)		
One	4	57
Two	2	29
Three	1	14
Comorbidity		
0	2	29
1	5	71

therapy, and three subjects (43%) received hormone therapy. In addition, four subjects (57%) had only one type of treatment. Two subjects (29%) had two types of treatment and one (14%) subject had three types of treatment in the independent study group.

Looking at comorbidity, two subjects (29%) had no other type of chronic illness. Five subjects (71%) had one or more other types of chronic illnesses.

Regarding information seeking style, the average monitor style score (ISSM) was 65.79 (s.d.=12.9). The average blunter style score (ISSB) was 42.67 (s.d.=19.21).

Research Question 3

What are the characteristics of women with breast cancer who participated in the nurse case manager intervention? Results by rank ordering of the data are presented in Table 8. Twelve subjects were in the nurse case manager intervention group; their ages ranged from 36 to 72 years ($\bar{x}=57.41$). As for the educational level, one subject (8%) had reached a high school level. One subject (8%) was a high school graduate; four subjects (33%) had attended some college; and six subjects (50%) had graduate or professional degrees. The average educational level was equal to or higher than some college level (83.3%).

Table 8. Frequencies of Women With Breast Cancer in the Nurse Case Manager Intervention (n=12)

Variables	Absolute Frequency	Relative Frequency(%)
Education		
8th grade or less	0	0
Some high school	1	8
High school graduate	1	8
Trade/Business school	0	0
Some college	4	33
College graduate	0	0
Graduate or professional degree	6	50
Martial Status		
Married	9	75
Separated	1	8
Divorced	1	8
Widowed	0	0
Single/never married	1	8
Gross Family Income		
below 10,000	0	0
10,000-19,999	1	8
20,000-29,999	2	17
30,000-39,999	1	8
40,000-49,999	0	0
50,000-59,999	3	25
60,000 & above	4	33
Missing case	1	8

Table 8 (Continued)

Variable	Absolute Frequency	Relative Frequency (%)
Type of surgery(s) (can check one more item)		
Radical mastectomy or Modified radical	5	42
Partial mastectomy	1	8
Local excision (lumpectomy)	9	75
Type of treatment(s) (can check one more item)		
Chemotherapy	7	58
Radiation therapy	7	58
Hormone therapy	3	25
Number of treatment(s)		
One	7	58
Two	5	42
Three	0	0
Comorbidity		
0	5	42
1	7	58

Regarding marital status, nine subjects (75%) were married. One subject (8%) was separated; one subject (8%) was divorced and one subject (8%) was single/never married.

Looking at the gross family income, one subject's (8%) income was \$10,000-19,999. Two subjects' income (17%) was \$20,000-29,999. One subject's (8%) was \$30,000-39,999. Three subjects' (25%) were \$50,000-59,999 and four subjects (33%) were \$60,000 and above. The average income of the subjects was greater than \$50,000.

Regarding the surgery(s), five subjects (42%) had radical or modified radical mastectomies. One subject (8%) had a partial mastectomy and nine subjects (75%) had local excisions (lumpectomy). As to treatment therapy, seven subjects (58%) received chemotherapy. Seven subjects (58%) received radiation therapy and three subjects (25%) received hormone therapy. Seven subjects (58%) received one type of treatment. Five subjects (42%) received two types of treatment.

Pertaining to comorbidity of those in the nurse case manager intervention group, five subjects (42%) had no other type of chronic illness. Seven subjects (58%) had one or more other types of chronic illnesses.

Regarding the information seeking style, the average monitor style score (ISSM) was 68.89 (s.d.=20.91).

The average blunter style score (ISSB) was 46.79 (s.d.=24.78).

Research Question 4

What is the relationship between demographic variables of women with breast cancer (age, education, income, and marital status) and type of intervention (self-help classes, independent study, and individual contact with a nurse case manager)? The Pearson Product-Moment correlation coefficient was calculated to determine strength relationships. A correlation coefficient of 0.26-0.49 is considered to be a low correlation; 0.59-0.69 is to be considered a moderate correlation; any value greater than 0.70 is considered to be a high correlation (Munro, Visintainer & Page, 1986). Of the demographic variables studied, age was found to have a meaningful relationship with the nurse case manager intervention, but it was a statistically low relationship ($r=.3$, $p=.1$) (Table 9). Income was also found to have a meaningful relationship with the nurse case manager intervention and was a statistically low relationship ($r=.3$, $p=.09$) (Table 9). No statistical significance was found in the relationship between demographic variables (age, education, income, and marital) and self-help class and independent study.

Marital status is a category variable, so the Chi-Square statistic was used to test this. No meaningful

Table 9. Pearson Product-Moment Correlation Coefficients of Demographic Variables and Self-Help Class (n=10), Independent Study (n=7), and Nurse Case Manager Interventions (n=12)

	Age	Education	Income	Marital Status
Self-Help Class	-.21 (p=.28)	-.27 (p=.16)	-.16 (p=.43)	-.15 (p=.45)
Independent Study	-.10 (p=.60)	.002 (p=.99)	-.19 (p=.32)	.23 (p=.23)
Nurse Case Manager	.29 (p=.1)*	.26 (p=.18)	.32 (p=.09)*	-.06 (p=.77)

*p ≤ .10

relationship was found between marital status and nursing intervention (self-help class, independent study, and nurse case manager) (Table 10).

Research Question 5

What is the relationship between the treatment characteristics of women with breast cancer and the type of intervention (self-help class, independent study, and individual contact with a nurse case manager)? Of the treatment characteristics studied, partial mastectomy was found to have a meaningful relationship with the independent study intervention and was a statistically low relationship ($r=.34$) (Table 11). Chemotherapy also was found to have a meaningful relationship with the self-help class, but it was a statistically low relationship. No statistically significant relationship was found among other surgeries, such as radical mastectomy or modified radical or local excision (lumpectomy), and nursing interventions. No meaningful relationship was found in the relationship of other type of treatment, such as radiation therapy or hormone therapy, and the nursing interventions.

Research Question 6

What is the relationship between comorbidity of women with breast cancer and the type of intervention (self-help class, independent study, and individual contact with a nurse case manager)? No meaningful statistical relationship

Table 10. Chi-Square Relationship of Marital Status and Self-Help Class (n=10), Independent Study (n=7), and Nurse Case Manager Intervention (n=12)

	Married	Separated	Divorced	Single/ never married
Self-Help Class	7	1	2	0

Chi-Square=.89, df=3, p=.83

	Married	Separated	Divorced	Single/ never married
Independent Study	3	0	4	0

Chi-Square= 5.84, df=3, p=.12

	Married	Separated	Divorced	Single/ never married
Nurse Case Manager	9	1	1	1

Chi-Square= 3.88, df=3, p=.28

Table 11. Pearson Product-Moment Correlation Coefficients of Treatment Characteristic and Self-Help Class (n=10), Independent Study (n=7), and Nurse Case Manager Intervention (n=12)

Treatment	Self-help Class	Independent Study	Nurse Manager
Type of surgery(s)			
Radical mastectomy or Modified radical	.27 (p=.16)	-.10 (p=.60)	-.17 (p=.38)
Partial mastectomy	-.25 (p=.20)	.34 (p=.07) *	-.60 (p=.78)
Local excision (lumpectomy)	-.08 (p=.67)	-.10 (p=.61)	.17 (p=.39)
Type of treatment(s)			
Chemotherapy	.33 (p=.08) *	-.14 (p=.46)	-.19 (p=.32)
Radiation	.12 (p=.54)	-.06 (p=.77)	-.07 (p=.74)
Hormone therapy	-.24 (p=.21)	.25 (p=.20)	.02 (p=.93)

*p ≤ .10

was found between comorbidity of women with breast cancer and the type of intervention.

Research Question 7

What is the relationship between the information seeking style of women with breast cancer and the type of intervention (self-help class, independent study, and individual contact with a nurse case manager)? The results indicated that of the blunter style scores of women with breast cancer there were low positive statistical relationships with the self-help class ($r=-.31$) and nurse case manager intervention ($r=.33$) (Table 12). No meaningful statistical relationships were found with the monitor style scores of women with breast cancer.

Several of the Information Seeking Style items had some significant correlations with the different types of nursing interventions. Monitor style item 1 ($r=.40$, $p=.03$), item 2 ($r=.30$, $p=.10$), item 5 ($r=-.31$, $p=.10$), item 9 ($r=-.36$, $p=.06$), item 15 ($r=.30$, $p=.10$), and blunter style item 2 ($r=.36$, $p=.07$), item 14 ($r=.34$, $p=.09$), item 16 ($r=.36$, $p=.07$) had a statistically significant relationship with nurse case manager intervention. Monitor style item 1 ($r=-.36$, $p=.06$), item 8 ($r=-.30$, $p=.10$), and blunter style item 10 ($r=.39$, $p=.05$) had a statistically significant relationship with independent study. Monitor style item 2 ($r=-.42$, $p=.03$) and blunter style item 10 ($r=-.35$, $p=.07$),

Table 12. Pearson Product-Moment Correlation Coefficients of Information Seeking Style and Self-Help Class (n=10), Independent Study (n=7), and Nurse Case Manager Intervention (n=12)

	Self-Help Class	Independent Study	Nurse Case Manager
ISSM	.06 (p=.77)	-.15 (p=.44)	.08 (p=.70)
ISSB	-.31 (p=.10)*	-.04 (p=.83)	.33 (p=.08)*

*p ≤ .10

Note. ISSM= Information Seeking Style Monitor Subscale
ISSB= Information Seeking Style Blunter Subscale

and item 16 ($r=-.46$, $p=.02$) had a statistically significant relationship with self-help class (Table 13).

Research Question 8

What is the relationship between type of intervention (self-help class, independent study, and individual contact with a nurse case manager) and self-help outcomes following completion of the nurse intervention? The score of the Inventory Adult Self-Care (items 24 to 42) instrument in women with breast cancer was found to have a low statistically significant relationship with the nurse case manager intervention ($r=.29$) (Table 14). No statistically significant relationship was found between the score of Inventory Adult Role Behavior (items from 1 to 23) and nurse interventions (self-help class, independent study, and nurse case manager).

Several of the individual Inventory Adult Role Behavior items had some significant correlation with the different types of nursing interventions. The nurse case manager had a statistically significant relationship with item 6 ($r=-.41$, $p<.08$), item 8 ($r=-.47$, $p<.04$), item 11 ($r=-.40$, $p<.09$), item 25 ($r=.42$, $p<.08$), item 30 ($r=.38$, $p<.1$), and item 42 ($r=.44$, $p<.06$). Respectively, the independent study had a statistically significant relationship with item 19 ($r=.40$, $p<.09$), and item 21 ($r=.52$, $p<.02$). The self-help

Table 13. Statistically Significant Pearson Product-Moment Correlation Coefficients of Information Seeking Style Items and Nurse Case Manager Intervention (n=12), Independent Study (n=7), and Self-Help Class (n=10)

Statement	Nurse Case Manager
(M1) I Would ask the dentist exactly what he/she was going to do.	r=.40 (p=.03)
(M2) I would want the dentist to tell me when I would feel pain.	r=.30 (p=.10)
(M5) I would stay alert and try to keep myself from falling asleep.	r=-.30 (p=.10)
(M9) I would talk to my fellow workers to see if they know anything about what the supervisor's evaluation of me said.	r=-.36 (p=.06)
(M15) I would listen carefully to the engines for unusual noises and would watch the crew to see if their behavior was out of the ordinary.	r=.30 (p=.10)
(B2) I would try to think about pleasant memories.	r=.36 (p=.07)
(B14) I would watch the end of the movie, even if I had seen it before.	r=.34 (p=.09)
(B16) I would settle down and read a book or magazine or write a letter.	r=.36 (p=.07)

Table 13 (Continued)

Statement	Independent Study
(M1) I would ask the dentist exactly what he/she was going to do.	r=-.36 (p=.06)
(M8) I would make sure I knew where every possible exit was.	r=-.30 (p=.10)
(B10) I would push all thoughts of being laid off out of my mind.	r=.39 (p=.05)

Statement	Self-Help Class
(M2) I would want the dentist to tell me when I would feel pain.	r=-.42 (p=.03)
(B10) I would push all thoughts of being laid off out of my mind.	r=-.35 (p=.07)
(B16) I would settle down and read a book or magazine or write a letter.	r=-.46 (p=.02)

* $p \leq .10$

Note. M=Information Seeking Monitor Style

B=Information Seeking Blunter Style

Table 14. Pearson Product-Moment Correlation Coefficients of Inventory Adult Role Behavior and Self-Help Class (n=10), Independent Study (n=7), and Nurse Case Manager Intervention (n=12)

	Self-Help Class	Independent Study	Nurse Case Manager
IARB	.15 (p=.47)	.10 (p=.62)	-.23 (p=.25)
IASC	-.20 (p=.31)	-.11 (p=.58)	.29 (p=.10)*
TIARB	.04 (p=.86)	.04 (p=.86)	-.06 (p=.75)

* $p \leq .10$

Note. IARB= Items numbered 1 to 23 (Inventory Adult Role
Self-Help Behavior Scale)

IASC= Items numbered 24 to 42 (Inventory Adult Self-
Care)

TIARB=42 items in the Inventory Adult Role Behavior
Scale

class had only a statistically significant relationship with item 42 ($r=-.35$, $p<.1$) (Table 15). Possible interpretations of these findings are discussed in the next chapter.

Summary

The results of the data analysis were discussed in this chapter. The sample characteristics, data collection instruments, and statistical analyses of the research questions were presented. In this study, the average age of the subjects was 54 years old; 66 percent of the subjects were married. Ninety-seven percent of the women had a high school education. The average family income was greater than 30,000 dollars per year. A low statistical relationship was found between demographic variables of age and income with the nurse case manager. The treatment characteristics had low relationships with the three types of nursing interventions. A low statistical relationship was found between partial mastectomy surgery and independent study. A low statistical relationship was found between chemotherapy and entering the self-help class. No statistically significant relationship was found between the monitor style and the type of nursing interventions. The blunter style scores had a low correlation with nurse case manager intervention. Selection of nurse case manager was

Table 15. Statistically Significant Pearson Product-Moment Correlation Coefficients of Several of Inventory Adult Role Behavior Items and Nurse Case Manager Intervention (n=12), Independent Study (n=7), and Self-Help Class (n=10)

Statement	Nurse Case Manager
6. I stay home as (much/little as possible)	r=-.41 (p=.08)
8. Because of my illness I isolate myself from the rest of my family to the (highest/least degree possible)	r=-.47 (p=.04)
11. My illness interferes with the length of visits with my friends to the (greatest/least extent possible)	r=-.40 (p=.09)
25. My doctor provides my only source of help for staying well. (not true/true about me)	r=.42 (p=.08)
30. I make use of number of resources besides my doctor to keep myself well (for example, books, classes, sharing with others) (true/not true about me)	r=.38 (p=.10)
42. I keep up to date on ways to stay well. (true/not true about me)	r=.44 (p=.06)

Table 15 (Continued)

Statement	Independent Study
19. Absenteeism from work (or school or housework) because of my illness is at the (greatest/least possible level)	r=.40 (p=.09)
21. Because of my illness, making the extra effort to excel at work (school) occurs to the (greatest/least possible extent)	r=.52 (p=.02)

Statement	Self-Help Class
42. I keep up to date on ways to stay well. (true/not true about me)	r=-.35 (p=.10)

* $p \leq .10$

statistically related to self-care outcome with a low correlation coefficient. No meaningful relationship was found between the self-help class, independent study and self-care and self-help outcome.

CHAPTER V

DISCUSSION, CONCLUSION, AND RECOMMENDATIONS

Discussion of the study sample and research questions is presented in this chapter. Limitations of the study, implications for nursing practice, and recommendations for further study are also presented.

Findings Related to the Conceptual Framework

The purpose of this secondary analysis was to describe the relationship among subject backgrounds (demographic characteristics, treatment characteristics, comorbidity, and information seeking style), nursing intervention (self-help class, independent study, and nurse case manager), and health outcomes (self-help and self-care behaviors).

Demographic variables and the nursing intervention

No statistically significant difference was found between education, marital status, and nursing interventions. Age was positively related to the nurse case manager ($r=.29$, $p.01$), thus indicating that more older women had agreed to participate in the nurse case manager. This finding supports previous findings of Vinokur, et al., (1989; 1990), which stated that older women with breast cancer have limited activity and may have more physical adjustment problems than younger women. They may have more

difficulty attending a class. The older women preferred individual contact with a nurse case manager.

Income was positively related to nurse case manager ($r=.32$, $p=.09$). This finding means that women who selected to participate in the nurse case manager intervention had higher income. Women who had a higher income may have a job (part time, full time). Sixty percent of the patients who agreed to participate in self-help class did not work. Seventy-one percent of the patients who had a part time job or full time job agreed to participate in independent study. Fifty percent of the patients who had a part time job or full time job agreed to participate in the nurse case manager.

Treatment characteristics and nursing interventions

Having a partial mastectomy was positively related to independent study intervention ($r=.34$, $p=.073$). The other kinds of surgery(s) were not significantly related to nursing interventions. These findings do not support previous research studies which state that more surgery can affect physical and psychological adjustment needs (Taylor, 1985).

Having chemotherapy was positively related to self-help class ($r=.33$, $p=.081$). The findings indicate that these women with breast cancer who received chemotherapy agreed to participate in a self-help type of nursing intervention.

Comorbidity and nursing intervention

There was no statistically significant relationship between comorbidity and the different types of nursing intervention. Possibly the average age (55 years) of the subjects in this study was too young to have had long-term chronic illness. According to the literature review, comorbidity may increase with time and possibly be changed in women with long-term breast cancer (Patterson, 1983).

Information seeking style and nursing intervention

The blunter style score of the subjects demonstrated a negatively statistically significant relationship with the self-help class. In other words, women with a recent diagnosis of breast cancer may avoid seeking information and participating in the self-help class because of the blunter style characteristics of not wanting a great amount of information. This might be expected because increasing sources of information increase the level of discomfort. The blunter style score of the subjects was positively statistically significant in relationship with the nurse case manager, i.e. the blunter style (information-avoiders) chose the nurse case manager intervention. No significantly statistical relationship was found between the blunter style and independent study.

The monitor style score of the subjects was not found to be significantly related to the different types of

nursing interventions. Although the monitor style scores had no statistically significant relationship with the nursing interventions, the monitor style women preferred the self-help class and nurse case manager interventions rather than independent study. Some of the individual monitor and blunter style items showed a statistically significant correlation with different types of nursing interventions.

Statistically significant relationships were found between certain items in the ISS scale and the types of nursing interventions. There were statistically low relationships with the nursing interventions. Some blunter style items were statistically significantly related to nurse case manager intervention in a positive direction (e.g., "I would try to think about pleasant memories.") Some monitor style items were statistically significantly related to nurse case manager (e.g., "I would ask the dentist exactly what he/she was going to do. ") Several monitor seeking style items were statistically significantly related to the independent study intervention in a negative direction (e.g., "I would ask the dentist exactly what he/she was going to do".) Several blunter style items were statistically significantly related to the independent study intervention in a positive direction (e.g., "I would push all thoughts of being laid off out of my mind".) Some monitor style and some blunter style items were

statistically significantly related to the self-help class intervention in a negative direction (Table 13).

An examination of these items indicates that information seeking by women with breast cancer who sought the knowledge and advice of experts also were in the nurse case manager intervention. The blunter style items which were related to independent study and self-help class interventions indicated clients' preference for internal control of situations. The women with breast cancer who participated the self-help class seemed to indicate in the item responses that they recognized their need to learn some self-help skills.

Nurse interventions and self-help outcome

These data were collected at time two in the study (after six weeks of nursing interventions). The sample size was 26 subjects in the time two data collection. Only the Inventory Adult Self-Care behavior scores were positively related to nurse case manager. This finding indicates that the women with breast cancer who had individual contact with a nurse case manager could learn more self-care abilities. This type of intervention, nurse case manager, which is probably more appropriate and individualized provides women with breast cancer self-care information for their individual needs. Much of the reviewed literature indicated

that the nurse case manager could improve patients' and families' autonomy (Wool et al., 1989).

Statistically significant relationships were found between certain items in the IARB scale and the types of nursing interventions. There were statistically significant low relationships with the nursing interventions. This suggests that the women with breast cancer in the nurse case manager group used the resources of physicians, family, friends and continued with social interaction. The job performance items were statistically significantly related to the independent study intervention in a negative direction, perhaps indicating a lack of time on the part of working women for interventions which require participation in a group. The item relating to keeping up to date on ways to stay well was negatively related to the self-help class. Perhaps those women recognized a need for increase self-help information.

No meaningful relationship was noted between the total scores of the Self-Help Adult Role behavior scale and different nursing interventions after six weeks. The self-help group (n=10), independent study group (n=7), and nurse case manager group (n=12) had subject samples which were too small to determine any statistically significant relationship with the self-help behavior outcomes.

Limitations of the Study

The limitations of this study may have affected the outcome responses to the research questions. One major limitation to this secondary analysis of data of the SHIP project was the small sample size (time one, n= 29; time two, n=26), which could limit the generalizability of the findings. In addition, heterogeneity of the sample may have affected the generalizability of the findings related to women with breast cancer who received various type of nursing interventions. The small number of subjects in each type of nursing intervention (self-help class, n=10; independent study, n=7; and nurse case manager, n=12) may also limit the generalizability of the findings related to the women with breast cancer who learned self-help behavior and self-care ability outcome.

The second limitation of this secondary analysis was that some women with breast cancer did not work, so some of the items such as IARB item 19, 20, 21, and 22 could not be answered. The percent of missing data for predicting self-help role behavior ranged from 15% to 19% missing data. This high percentage of missing data could have altered the results.

The third limitation of this secondary analysis was the information seeking style scale which had a low reliability (Cronbach's alpha coefficient was less than .70). The

reliability coefficient calculation results indicated that items were found to be unsuitable for this study. In fact, the monitor and blunter style might be affected by hearing of the diagnosis of breast cancer or even by individual personality and background. Therefore, if information seeking style is seen as a moderator factor, it may have more significance. Also if the information seeking style were measured again after six weeks, the scores might reflect patients' change of information seeking style.

Recommendations for Further Study

1. Conduct a study with groups of women with breast cancer receiving one type of treatment only or one type of surgery to study the effects of the types of nursing intervention.
2. A more diverse sample could be used to include the interaction of variables (age X comorbidity, or age X treatment characteristics, information seeking style X treatment characteristics, and information seeking style X demographic variables) related to nursing interventions.
3. Comparison of data collected at the time one and time two (after nursing interventions) regarding information seeking style.

4. Pre and post test comparison of data collected regarding Inventory Adult Role Behavior before and after nursing interventions.
5. Assessment of nursing interventions (self-help class, independent study, and nurse case manager) which increase self-help behaviors and self-care abilities in women with other types of cancer than breast cancer.

Implications for Nursing

In the United States, breast cancer has increasingly become the leading form of cancer (affecting one in every nine women during their lifetime) and the second leading cause of death from all forms of cancer in women (American Cancer Society, 1991). Therefore, health professionals need to focus increasingly on a treatment plan that enables women to provide self-care or self-help, and adapt to changes in life style. Breast cancer is a chronic disease, so the nurse and other health care providers need to know how to achieve high quality care as economically as possible and how to enhance self-care and self-responsibility for patients and their families.

In this secondary analysis, the sample of women with breast cancer had different types of nursing interventions. The personal background (age, income, and blunter of

information seeking style) was found to have some positive significant correlation with the nurse case manager. In turn, the nurse case manager intervention was also found to be statistically significantly related to the self-care outcomes. This finding indicates that nurse case managers have an important function to assist the individual to learn self-care abilities. The results of the study demonstrated the need to develop the nurse case manager intervention to improve patient problems-solving skills and to increase outpatient autonomy and ability. Self-help activities can counteract common feelings of helplessness associated with breast cancer.

Summary

This chapter presented a discussion of the results of this secondary analysis. If the study could follow the recommendations for further study, the findings would be more generalizable and have fewer limitations. It is recognized that nurse interventions are crucial to the education of women with breast cancer on how to improve their self-help behaviors and self-care abilities. Nurses have to assess continually their patients individually in order to provide appropriate interventions.

APPENDIX A

SHIP HUMAN SUBJECTS APPROVAL



THE UNIVERSITY OF ARIZONA
TUCSON, ARIZONA 85721

COLLEGE OF NURSING

MEMORANDUM

TO: Carrie Jo Braden, Ph.D., R.N.

FROM: Linda R. Phillips, PhD, RN, FAAN *LRP*
Associate Dean for Research

DATE: February 23, 1989

RE: Human Subjects Review: "Nurse Interventions Promoting Self Response to
Cancer"

Your project has been reviewed and approved as exempt from University review by the College of Nursing Ethical Review Subcommittee of the Research Committee and the Director of Research. A consent form with subject signature is not required for projects exempt from full University review. Please use only a disclaimer format for subjects to read before giving their oral consent to the research. The Human Subjects Project Approval Form is filed in the office of the Director of Research if you need access to it.

We wish you a valuable and stimulating experience with your research.

LRP/ms

APPENDIX B

HUMAN SUBJECTS APPROVAL BY
UNIVERSITY OF ARIZONA COLLEGE OF NURSING
ETHICAL REVIEW COMMITTEE



THE UNIVERSITY OF ARIZONA
TUCSON, ARIZONA 85721

COLLEGE OF NURSING

August 28, 1991

Tze-Fang Wang
Graduate Student
University of Arizona
College of Nursing
Tucson, AZ 85721

Dear Ms. Wang,

Your request to complete a secondary data analysis using Dr. Carrie Braden's data associated with "Nurse Interventions Promoting Self Response to Cancer", was received and reviewed within the Office of Research. Based on the prior project approval, we are pleased to approve your use of the data as an exempt project.

Best wishes with your research.

Sincerely,

A handwritten signature in cursive script, appearing to read "Leanna Crosby".

Leanna J. Crosby, D.N.Sc., R.N.
Director of Laboratory and Intramural Research
College of Nursing

cc: Dr. Mary Alexander
Dr. Carrie Braden
Mary Shelton

APPENDIX C

DEMOGRAPHIC DATA

**SELF-HELP INTERVENTION PROJECT:
BREAST CANCER TREATMENT**

DEMOGRAPHIC DATA

Age: _____

Marital Status
(check one)

Married _____
Separated _____
Divorced _____
Widowed _____
Single/never married _____

Working/School (check one)

(2) Full time _____
(1) Part time _____
(0) None _____

Education (check one)

(1) 8th grade or less _____
(2) some high school _____
(3) high school graduate _____
(4) trade/business school _____
(5) some college _____
(6) college graduate _____
(7) graduate or professional degree _____

Gross Family Income
(check one)

(7) \$60,000 above _____
(6) 50,000 - 59,999 _____
(5) 40,000 - 49,999 _____
(4) 30,000 - 39,999 _____
(3) 20,000 - 29,999 _____
(2) 10,000 - 19,999 _____
(1) below 10,000 _____

Date of Diagnosis of Breast Cancer: _____

Type of Surgery(s):
(check all that apply)

Radical mastectomy or
Modified radical _____
Partial mastectomy _____
Local excision _____
(lumpectomy) _____

Date done

Type of Treatment(s):
(check all that apply)

Chemotherapy _____
Radiation _____
Hormone therapy _____

Approximate date treatment complete:

Who lives at home with you? (check all that apply)

Husband _____ Friends _____
 Children _____ (Age) Other _____
 Other family _____

Family History of breast cancer (check all that apply)

	<u>Mother</u>	<u>Sister(s)</u>	<u>Paternal</u>	<u>Maternal</u>
				<u>Grandmother</u>
	_____	_____	_____	_____
Age at diagnosis:	_____	_____	_____	_____

Ethnic Origin:

(1) White _____ (2) Hispanic _____ (3) Black _____ (4) Native
 American _____ (5) Oriental _____ (6) Other _____

List of other chronic illnesses/diseases:

Insurance Coverage (check one)

(1) Blue Cross/Blue Shield (5) AHCCCS
 (2) Commercial Insurance-e.g. Aetana (6) Self-pay
 (3) HMO-e.g. Intergroup, Cigna (7) Other
 (Specify _____)
 (4) Medicare

Briefly describe how you discovered that you had breast cancer.

APPENDIX D

INFORMATION SEEKING STYLE

DATE: _____

ID #: _____

T: _____

ISS

Vividly imagine that you are afraid of the dentist and have to get some dental work done. Read each of the following and indicate, by making your mark on the line, the degree to which each of the statements would be true about you in this situation:

(M1) I would ask the dentist exactly what he/she was going to do.

Not true _____ True
about me _____ about me

(B1) I would take a tranquilizer or have a drink before going.

Not true _____ True
about me _____ about me

(B2) I would try to think about pleasant memories.

Not true _____ True
about me _____ about me

(M2) I would want the dentist to tell me when I would feel pain.

Not true _____ True
about me _____ about me

(B3) I would try to sleep.

Not true _____ True
about me _____ about me

(M3) I would watch all the dentist's movements and listen for the sound of his drill.

Not true _____ True
about me _____ about me

(M4) I would watch the flow of water from my mouth to see if contained blood.

Not true _____ True
about me _____ about me

(B4) I would do mental puzzles in my mind.

Not true _____ True
about me _____ about me

Vividly imagine that you are being held hostage by a group of armed terrorists in a public building. Read each of the following and indicate, by marking your mark on the line, the degree to which each of the statements would be true about you in this situation.

(B5) I would sit by myself and have as many daydreams and fantasies as I could.

Not true _____ True
about me _____ about me

(M5) I would stay alert and try to keep myself from falling asleep.

Not true _____ True
about me _____ about me

(B6) I would exchange life stories with the other hostages.

Not true _____ True
about me _____ about me

(M6) If there was a radio present, I would stay near it and listen to the bulletins about what the police were doing.

Not true _____ True
about me _____ about me

(M7) I would watch every movement of my captors and keep an eye on their weapons.

Not true _____ True
about me _____ about me

(B7) I would try to sleep as much as possible.

Not true _____ True
about me _____ about me

(B8) I would think about how nice it's going to be when I get home.

No true _____ True
about me _____ about me

(M8) I would make sure I knew where every possible exit was.

Not true _____ True
about me _____ about me

Vividly imagine that, due to a large drop in sale, it is rumored that several people in your department at work will be laid off. Your supervisor has turned in an evaluation of your work for the past year. The decision about lay-offs has been made and will be announced in several days. Read each of the following and indicate, by making your mark on the line, the degree to which each of the statements would be true about you in this situation?

(M9) I would talk to my fellow workers to see if they knew anything about what the supervisor's evaluation of me said.

Not true about me _____ True about me

(M10) I would review the list of duties for my present job and try to figure out if I had fulfilled them all.

Not true about me _____ True about me

(B9) I would go to the movies to take my mind off of things.

Not true about me _____ True about me

(M11) I would try to remember any arguments or disagreements I might have had with the supervisor that would have lowered his opinion of me.

Not true about me _____ True about me

(B10) I would push all thoughts of being laid off out of my mind.

Not true about me _____ True about me

(B11) I would tell my spouse that I'd rather not discuss my chances of being laid off.

Not true about me _____ True about me

(M12) I would try to think which employees in my department the supervisor might have through had done the worst job.

Not true about me _____ True about me

(B12) I would continue doing my work as if nothing special was happening.

Not true _____ True
about me _____ about me

Vividly imagine that you are on an airplane, 30 minutes from your destination, when the plane unexpectedly goes into a deep dive and then suddenly levels off. After a short time, the pilot announces that nothing is wrong, although the rest of the ride may be rough. You, however, are not convinced that all is well. Read each of the following and indicate, by making your mark on the line, the degree to which each of the statements would be true about you in this situation:

(M13) I would carefully read the information provided about safety features in the plane and make sure I knew where the emergency exits were.

Not true _____ True
about me _____ about me

(B13) I would make small talk with the passenger beside me.

Not true _____ True
about me _____ about me

(B14) I would watch the end of the movie, even if I had seen it before.

Not true _____ True
about me _____ about me

(M14) I would call for the stewardess and ask her exactly what the problem was.

Not true _____ True
about me _____ about me

(B15) I would order a drink or tranquilizer from the stewardess.

Not true _____ True
about me _____ about me

(M16) I would talk to the passenger beside me about what might be wrong.

Not true _____ True
about me _____ about me

(B16) I would settle down and read a book or magazine or write a letter.

Not true _____ True
about me _____ about me

APPENDIX E

INVENTORY ADULT ROLE BEHAVIOR

DATE _____

ID # _____

T _____

IARB

Read the following statements and place a mark at the point on the line that best fits you today.

1. Because of my illness I go out to social events as
 Little as possible _____ Much as possible
2. Because of my illness I am doing shopping and errands as
 Much as possible _____ Little as possible
3. I am able to participate in my usual social activities
 at the
 Lowest level possible _____ Highest level possible
4. I am doing my usual community activities at the
 Highest possible level _____ Lowest possible level
5. I am doing my usual recreational activities at the
 Least possible level _____ Highest possible level
6. I stay home as
 Little as possible _____ Much as possible
7. My illness has disrupted my friendships to the
 Highest degree possible _____ Least degree possible
8. Because of my illness I isolate myself from the rest of
 my family to the
 Least degree possible _____ Highest degree possible

9. I act irritable toward family members (for example, snap at them, criticize them, pick fights) to the

Greatest extent possible	Least extent possible
--------------------------------	-----------------------------

10. My illness interferes with the regular daily work around the house I usually do (for example, yard work repairs, cooking, cleaning, etc) to the

Least degree possible	Highest degree possible
-----------------------------	-------------------------------

11. My illness interferes with the length of visits with my friends to the

Least extent possible	Greatest extent possible
-----------------------------	--------------------------------

12. My illness interferes with the things I usually do for fun to the

Greatest extent possible	Least extent possible
--------------------------------	-----------------------------

13. I have influence in my family appropriate to my place in the family (i.e., as husband, wife, son, daughter, etc) to the

Most extent possible	Least extent possible
----------------------------	-----------------------------

14. I am involved in a variety of rewarding social activities to the

Least extent possible	Most extent possible
-----------------------------	----------------------------

15. My leisure time is occupied with a variety of rewarding activities to the

Most extent possible	Least extent possible
----------------------------	-----------------------------

16. My physical limitations on sexual activity effect me to the

Greatest extent possible	Least extent possible
--------------------------------	-----------------------------

17. The influence of my illness in causing me to be involved in only inactive recreational things (for example, TV, cards, reading) is

The least possible influence _____

The most possible influence

18. Because of my illness doing a different kind of less satisfying work was the

Most necessary thing to do _____

Least necessary thing to do

19. Absenteeism from work (or school or housework) because of my illness is at the

Least possible level _____

Greatest possible level

20. Doing my job as carefully and as accurately as I can continue to be at the

Lowest possible level _____

Highest possible level

21. Because of my illness, making the extra effort to excel at work (school) occurs to the

Least possible extent _____

Greatest possible extent

22. Because of my illness I act irritable toward my work (school) associates (for example, snap at them, give short answers, criticize easily) to the

Greatest possible extent _____

Least possible extent

23. My illness interferes with my work (school, housework, volunteer work) to the

Highest possible level _____

Lowest possible level

24. Every day, I do extra things to keep myself well.

Not true about me _____

True about me

25. My doctor provides my only source of help for staying well.
 True about me _____ Not true about me
26. I keep track of how well a treatment works for me.
 Not true about me _____ True about me
27. I ignore my health.
 True about me _____ Not true about me
28. I follow guidelines for good nutrition and exercise that are suitable for me.
 Not true about me _____ True about me
29. I do nothing to keep well.
 True about me _____ Not true about me
30. I make use of a number of resources besides my doctor to keep myself well (for example, books, classes, sharing with others)
 Not true about me _____ True about me
31. I don't pay attention to disease symptoms.
 True about me _____ Not true about me
32. I don't read about what to do to stay well.
 Not true about me _____ True about me
33. I take medication not prescribed by my doctor.
 True about me _____ Not true about me
34. I spend time on everything except trying to stay well
 Not true about me _____ True about me
35. I find ways in addition to what my doctor advises to keep myself in the best possible health.
 True about me _____ Not true about me

36. I seldom attempt to have good nutrition and enough exercise.
Not true _____ True
about me _____ about me
37. I pay attention to how my body feels.
True _____ Not true
about me _____ about me
38. I spend time keeping myself well.
Not true _____ True
about me _____ about me
39. I attempt to keep myself well.
Not true _____ True
about me _____ about me
40. I determine what my symptoms mean before I call a doctor.
Not true _____ True
about me _____ about me
41. I make my own adjustments in how much medication I take.
True _____ Not true
about me _____ about me
42. I keep up to date on ways to stay well.
Not true _____ True
about me _____ about me

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