HEALTH LOCUS OF CONTROL AND CANCER HEALTH BELIEFS OF SPOUSES

A THESIS

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Ah . . . but a man's reach

should exceed his grasp .

. . . Robert Browning

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Not to us, O Lord, not to us
but to thy name give glory
for the sake of thy steadfast love
and thy faithfulness!
Psalm 115:1

"For I the Lord thy God will hold
thy right hand, saying unto thee,
Fear not; I will help thee."
Isaiah 41:13

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CHAPTER 1

INTRODUCTION

The roles and responsibilities of the health care professional are being challenged. The artificial barriers between prevention of health problems and treatment of disease are disappearing as the objective of health care has come to be seen as the promotion of general good health for the family and community. This emphasis on the health of the family and community and how best to meet its health needs has helped to create an emerging role for the nurse. The challenge to the nurse is to have the vision, methods, and competencies to make a contribution for improved and more comprehensive health services. Such attributes might help in the formulation of health care strategies for the detection and prevention of specific diseases such as cancer.

Family nursing care is seen as an insight to detection and prevention of cancer. The community health nurse's responsibility is seen as encompassing in such crucial health problems as understanding of preventive patterns and health maintenance activities in family interaction. The relationship between husband and wife

might influence health behavior and might include variables which could affect health practices and behavior.

The nurse's perception of cancer health beliefs may result in the formulation of health education strategies to modify health attitudes and subsequent behavior patterns. Cancer health beliefs are present even in the absence of symptoms; thus, the problem in educating people lies in finding a strategy to produce a change in these beliefs. The researcher's task, then, is to learn if the behavior of the husband or wife in sanctioning health beliefs can be used to predict subsequent action on the part of the spouse so that education, procedures, and treatments may be formulated accordingly.

Problem of Study

This study was attempted in order to determine if there was a relationship between a husband or wife's health locus of control orientation and the cancer health beliefs of the spouse.

Justification of Problem

The researcher predicted that one's environment affected his health beliefs. Personal environment in a marriage situation may set into motion expectancies for esteem from others or a sense of peer belonging.

The attitudes of a husband or wife regarding cancer health care may well influence a spouse's response to the prevention or detection of cancer.

Krech, Crutchfield, and Ballachey (1962) suggested that studies of beliefs rest on the premise that beliefs play an influential role in determining behavior, and that by knowing the attitudes of people it is possible to do something about predicting and controlling their behavior. The point of view presented here suggests that attitudes and beliefs play a prominent role in experience and behavior.

Becker's (1974) Health Belief Model relates psychological theories of decision making to an individual's decision about alternative health behaviors. Becker (1974) submitted that the health beliefs thought to form the basis for decisions about health care are part of the individual's "personality" and cognitive structure, and as such they are conditioned by social circumstances and interactions with others. Becker (1974) stated while some evidence can be adduced that health beliefs mediate the relationships between social-structural characteristics and illness decisions, the picture is unclear. Attitudes, beliefs, values, and opinions, in varying meanings, litter the conceptual landscape.

Becker (1974) specified that beliefs energize and direct behavior (or at least represent the existence of such forces in the person). In other words, one way of viewing beliefs is in terms of their guiding influences in peoples' reaction to the physical and social environment. Brewster, Bruner, and White (1962) have taken a similar view as shown in their definition of beliefs as a "predisposition to experience a class of objects in characteristic ways and to act with respect to these objects in a characteristic fashion" (p. 33). This view of beliefs emphasizes their role in the relationship between an individual and his environment. Such a view also emphasizes the influence of attitudes in personality functioning.

Suchman's (1966) study hypothesized that the social structure in which a person lives is related to his belief in and acceptance of medical care. Suchman (1965) classified social structure as a "parochial cosmopolitan" dimension while health orientation is represented by the dimension of "popular-scientific" point of view. For example, persons involved in more parochial groups can be expected to hold more folk beliefs about health, delay in symptom recognition, and attempted self-treatment. Suchman (1965) included in the measure of social

organization the ethnic exclusivity and traditional family authority--both of which should be related to the possible paths of action that are known and available to the individual.

Rosenstock (1966) has attributed the origins of tradition of the behavior motivation theory underlying the Health Belief Model to Lewinian theory of goal setting in the level-of-aspiration situations. Rosenstock hypothesized that a decision to obtain a preventive or detection test in the absence of symptoms must satisfy such conditions as perceived susceptibility and perceived severity. Other variables are that taking a particular action could, in fact, be beneficial by reducing the severity or susceptibility to the illness or that it might entail important psychological barriers such as cost, convenience, pain, or embarrassment. The level of readiness (susceptibility and severity) provides the energy or force to act and the perception of benefits (less barriers) provides a preferred path of action. Rosenstock (1966) suggested health beliefs are doubtlessly influenced by the norms and pressures of his social group. Other major variables in the model are drawn and adapted from general social-psychological theory, notably the work of Lewin. The variables deal

with the subjective world of the behaving individual and not with the objective world of the physician.

Rosenstock (1966) analyzed the major findings of his studies on the pattern of uses of preventive and detection services with summary generalizations about association of personal characteristics. With respect to characteristics of those who delay in seeking diagnosis and treatment of cancer, similar patterns emerged. Persons who delay are older, of lower educational status, and in the majority of studies were males. Rosenstock (1966) documented that "clinical consequences" included broad and complex implications as the effects of the disease on his job, family life, and social relations. Rosenstock supported the direction that the action taken is influenced by the norms and pressures of social groups.

The research of Gore and Rotter (1963) supported Rotter's Internal-External (I-E) Scale relating directly to social action-taking behavior. Gore and Rotter obtained a 3.12 score which was above the significant .01 level. The study of Rotter, Chance, and Phares (1972) strongly suggested that a major variable in the study of social influence situations was the internal-external control dimension. Rotter et al.'s (1972) study

complements Gore and Rotter's (1963) and Rotter's (1966) findings by indicating that the I-E dimension likewise operates with those who would exert the influence. Several questions are left unanswered by Rotter et al.'s (1972) research. For example, the specific techniques by which internals are better able to exert influence remains for further research to elucidate. What are the specific mechanics (tone, gesture, and facial expression) by which the influence is better exerted? Some of the experiments by Rosenthal and Fode (1962) suggested the importance of visual cues. Also left unanswered is the question of the interaction between internal-external control and the strength of attitudes held. Thus, would the same results be obtained when the subjects held very strong attitudes about various issues?

Wallston and Wallston (1978) cited specific behavior where locus of control was relevant which included seeking information, taking medication, making and keeping physician appointments, maintaining a diet, and giving up smoking. Internals generally show more positive behaviors in each of these areas; but contradictory evidence has been presented which, in some instances, could indicate that it is more functional to hold external beliefs. The lack of consistent findings may relate to

to differences in or problems with the measurement of locus of control and/or to failure on the part of many investigators to consider other variables which modify the influences of locus of control beliefs.

Knutson (1965) determined one way in which the social structure shapes health beliefs is through selective exposure to ideas and information once a given position has been achieved. Because part of every person's selective orientation to his world is due to his existing beliefs and attitudes, his exposure is limited by his primary groups, the people with whom he has face-to-face contact. Because of similar spheres of activity and reference groups, the subject hears from others those beliefs which he hears from himself, thus, promoting an increasing homogeneity of opinions for persons in similar or related role positions.

The researcher by determining the impact of the environment on the individual's conception of cancer health care, particularly the influence of a spouse's beliefs, should be able to develop programs which can be adjusted with regard to these variables. Education, procedures, and treatments which have been tailored to match the partner's locus of control might well be more successful than treatments which have not.

Theoretical Framework

Beliefs and feelings about a disease should be emphasized as only one of many factors influencing whether or not persons will participate in health programs. In 1954, Rotter, Fitzgerald, and Joyce published a theory which attempted to combine the best from prior Stimulus-Response (S-R) or reinforcement theories of behavior and cognitive or field theories. The theory was developed to explain complex human social behavior and was concerned with how choices are made by individuals from the array of potential behaviors which are available to them in any given situation. Rotter et al. (1972) did not claim this theory was "true" or that it necessarily reflected reality, but did propose social learning theory as a useful conceptual system through which to view reality.

A comprehensive review of significant concepts and postulates of the social learning theory can be developed from the interaction of man with his meaningful environment (Rotter et al., 1972). Rotter et al. (1972) theorized that man's behavior should not be considered in isolation from his environment or the situation which is expected to have affected behavior. In other words,

behavior cannot be accurately understood apart from situational determinants.

In addition to studying behavior within a situational context, social learning theory also focuses on learned human social behavior. This limits the scope of the theory to those patterns of behaviors which are learned (as opposed to unlearned, biological determinants of behavior). Focusing on patterns of behavior which are considered to have been learned means is concerned with values, attitudes, expectations rather than instincts, and other innate influences on behavior.

The concept of expectancy is based on the theory that

> the occurrence of a behavior of a person is determined not only by the nature or importance of goals or reinforcement but also by the person's anticipation or expectancy that these goals will occur. Such expectations are determined by previous experience and can be quantified. (Rotter et al., 1972, p. 11)

The consideration of expectancies is central and paramount to social learning theory and considered to be the prime determinant of behavior.

In addition to the social learning theory's major postulates, there are four key concepts which are utilized in the prediction of behavior. One purpose of any theory is prediction, and through the concepts of

expectancy, a predictive power can be achieved by the social learning theory (Rotter et al., 1972).

The basic concepts are behavior potential, expectancy, reinforcement value, and the psychological situation (Rotter et al., 1972). The following explanations of the use of these terms are given by Rotter et al. (1972):

> Behavior potential may be defined as the potentiality of any behavior's occurring in any given situation or situations as calculated in relation to any single reinforcement or set of reinforcements. (p. 12)
>
> Expectancy may be defined as the probability held by the individual that a particular reinforcement will occur as a function of a specific behavior on his part in a specific situation or situations. Expectancy is systematically independent of the value or importance of the reinforcement. (p. 12)
>
> The reinforcement value of any one of a group of potentially external reinforcements may be ideally defined as the degree of the person's preference for that reinforcement to occur if the possibilities of occurrence of all alternatives were equal. (p. 13)

Rotter et al. (1972) did not define explicitly the psychological situation; however, they discussed it in terms of external and internal environmental stimuli to which an individual reacts selectively. The expectancy for any specific situation is dependent upon prior experience in that situation as well as past experience in similar situations. The contribution of the generalized

expectancy to the specific expectancy for the situation will depend upon many factors, including the novelty of the situation. The important point to be emphasized is that generalized expectancies do affect behavior (Rotter et al., 1972).

A special type of generalized expectancy is represented by the label "internal or external control of reinforcement." Those individuals who manifest an internal control of reinforcement believe that what happens to them in life is dependent upon their own behavior and/or control, while externals believe that luck, fate, or powerful others control the reinforcements they receive (Rotter, 1966). Rotter et al. (1972) implied that knowledge of how an individual generally views the control of reinforcement in his life can be helpful in predicting behavior. The discussion of the formula for behavior potential indicates that the higher the expectancy or the reinforcement value, the higher the value of the behavior potential (Rotter et al., 1954).

Assumptions

The following assumptions were related to this study:

1. Individuals assume either predominantly externality-type or internality-type personalities.

2. Personality characteristics common to externality and internality are measurable.

3. Interdependence with a commitment of intimacy between cohabitating partners of more than 5 years affects health beliefs.

Hypotheses

The following hypotheses were examined in this study:

Major Hypothesis

There is no significant relationship between cancer health beliefs of husbands and wives and the health locus of control orientation of the pairs.

Minor Hypotheses

1. There is no significant relationship between those spouses who have homogeneous health locus of control orientation in relation to their health beliefs about cancer.

2. There is no significant relationship between those spouses who have heterogeneous health locus of control orientation in relation to their health beliefs about cancer.

Definition of Terms

The following terms were defined with regard to their use in this study:

1. Cancer health beliefs--a system of tendencies to act on health decisions regarding cancer in a way indicating concern or lack of concern with regard to one's health. Gray's Health Belief Index was utilized for operationalization.

2. Locus of Control--the score obtained on a scale indicating the degree of internality or externality with which a patient views life in general (Rotter, 1966). Those individuals who manifest an internal control of reinforcement believe that what happens to them in life is dependent upon their own behavior and/or control, while externals believe that luck, fate, or powerful others control the reinforcement they receive (Rotter, 1966). Locus of control is a continuous variable which may be dichotomized into an internal and an external locus of control and is determined by the Rotter Internal-External LOC Scale (I-E Scale).

3. Health Locus of Control--concerned with how a patient views a locus of control specifically in relation to health. It is determined by Wallston's Health

Locus of Control (HLC) Scale (Wallston, Wallston, Kaplan, & Maides, 1976).

4. Spouse--refers to a partner in marriage (or a marriage-style situation) in which the members have been cohabiting for at least 5 years.

5. Homogeneous Health Loci of Control--the same in structure, quality, similar or identical, uniform in elements or parts, having all terms of the same dimension of locus of control.

6. Heterogeneous Health Loci of Control--differing or opposite in structure or quality, dissimilar; incongruous, composed of unrelated or unlike elements or parts for locus of control.

7. Positive/High Health Belief--those subjects who scored above the mean score of Gray's Health Belief Index.

8. Negative/Low Health Belief--those subjects who scores below the mean score of Gray's Health Belief Index.

Limitations

The limitations of this study were as follows:

1. No controls were exerted for the variables of cultural influences, family size, occupation, or education.

2. Wallston's Health Locus of Control Scale was a subjective instrument and subjects may have been mislabeled as internalist or externalist due to the inaccurancy of their self-perception.

3. Wallston's Health Locus of Control Scale had not previously been used to analyze people between the ages of 55 and 65 years.

Summary

This chapter has stated the problem of the study which was to determine if there was a relationship between a husband's or wife's health locus of control orientation and the cancer health beliefs of the spouse. The major hypothesis has been stated that there is no significant relationship between cancer health beliefs of husbands and wives and the health locus of control orientation of the pairs. This study used the theoretical framework and significant concepts of the social learning theory of the interaction of man with his meaningful environment (Rotter et al., 1972). Also presented in this chapter have been the assumptions, definition of terms, and limitations of the study.

CHAPTER 2

REVIEW OF LITERATURE

This study was concerned with health locus of control and cancer health beliefs. Thus, the literature reviewed in preparation for this investigation focused upon four major areas: (a) health belief model, (b) cancer health beliefs and feelings, (c) spouse's family health belief relationships, and (d) powerful others.

Health Belief Model

The Health Belief Model (Maiman & Becker, 1974) relates psychological theories of decision making (which attempt to explain action in a choice situation) to an individual's decision about alternative health behaviors. Rosenstock (1966) has attributed the origins of that tradition of behavior motivation theory underlying the Health Belief Model to Lewinian theory of goal setting in the level-of-aspiration situation (a special case of the latter's general field theory). Lewin, Dembo, Festinger, and Sears (1944) hypothesized that behavior depends mainly upon two variables: (a) the value placed by an individual on a particular outcome, and (b) the

individual's estimate of the likelihood that a given action will result in that outcome. Also in the Lewinian tradition, the theory could be expected to focus on the current (ahistorical) dynamics confronting the behaving individual rather than on the historical perspective of his prior experiences.

The earliest characteristics of the Health Belief Model, as they were translated from the foregoing abstraction, were that in order for an individual to take action to avoid a disease he would need to believe: (a) that he was personally susceptible to it, (b) that the occurrence of the disease would have at least moderate severity on some component of his life, and (c) that taking a particular action would in fact be beneficial by reducing his susceptibility to the condition or, if the disease occurred by reducing its severity, and that it would not entail overcoming important psychological barriers such as cost, convenience, pain, and embarrassment.

Rosenstock (1966) stated that beliefs in the area of one's susceptibility and seriousness are undoubtedly influenced by the norms and pressures on his social groups. Maiman and Becker (1974) described the Health Belief Model as concerned with the subjective world of

the acting individual and proposed the following theoretical conditions and components:

1. The individual's psychological "readiness to take action" relative to a particular health condition, determined by both the person's perceived "susceptibility" or vulnerability to the particular condition, and by his perceptions of the "severity" of the consequences of contracting the condition.

2. The individual's evaluation of the advocated health action in terms of its feasibility and efficaciousness (his estimate of the action's potential "benefits" in reducing actual or perceived susceptibility and/or severity), weighed against his perceptions of psychological and other "barrier" or "costs" of the proposed action (including the "work" involved in taking action). Finally, a "stimulus" either "internal" (perception of bodily states) or "external" (interpersonal interactions, mass media communications, personal knowledge of someone affected by the condition) must occur to trigger the appropriate health behavior; this is termed the "cue to action." The health beliefs thought to form the basis for decisions about health care are part of the individual's "personality" and cognitive structures.

Cancer Health Beliefs and Feelings

The study of beliefs and feelings about disease is a necessary component to better understand why many people fail to accept proved preventive health measures for cancer. Jenkins (1966) conducted a study of semantic differential for health with a probability sample of 436 persons, aged 20-39 years, in a large urban county of Florida. The sample was composed of 202 men and 234 women. In terms of potency, cancer was believed to be the most powerful of the four compared diseases in Jenkins' (1966) study. Cancer was seen as the most painful of these diseases. More than one-half of the sample rated it at the far edge of the "extremely painful" end of the scale. If life threatening characteristics are adequate indices of fear, cancer was the most feared of the four diseases studied. All five scales relating to areas of belief and feeling constantly showed that the population studied accorded cancer the most threatening position. Cancer was the disease reputed to be the most talked about by others, and also most thought about by respondents. Jenkins (1966) indicated that these fear-provoking perceptions do not seem so threatening that persons (at least those under the age

of 40) are afraid to think about or talk about this disease. The freedom to discuss the disease was an encouraging sign for preventive health efforts directed toward cancer. Behavioral science theory suggests that when a condition can be discussed openly, people were more likely to respond rationally to a control program.

Jenkins (1966) found that cancer and tuberculosis were perceived quite similarly: both were rated far more "dirty" than mental illness and poliomyelitis. Poliomyelitis appeared more frequently on the "dirty" end of the continuum, perhaps because it is an infectious disease. But this hypothesis does not account for the extreme ratings given cancer. Perhaps the physical deterioration observed in some terminal cancer patients influenced these ratings.

Jenkins (1966) two scales dealing with whether man can master nature or must remain subservient to it indicated that a sizable number (32%) of subjects placed cancer to the more mysterious side of the midpoint of the scale. Two-thirds of Jenkins' (1966) respondents indicated that cancer was difficult to impossible to prevent. The respondents revealed a far more fatalistic, helpless attitude toward cancer than toward any of the other three diseases.

Sontag (1977) compared the currently fashionable theory of cancer-prone personality type with the 19th century theories which ascribed tuberculosis to depressing emotions. She analyzed the peculiarly modern prediction for psychological explanation of disease, and argued that

> a large part of the popularity and persuasiveness of psychology comes from its being a sublimated spiritualism; a secular, ostensibly scientific way of affirming the primacy of spirit over matter. (Sontag, 1977, front inside cover)

Sontag (1977) cited that with the advent of Christianity, which imposed more moralized notions of disease, as of everything else, a closer fit between disease and "victim" gradually evolved. The idea of disease as punishment yielded the idea that a disease could be particularly appropriate and just punishment. Disease occurs in the Iliad and the Odyssey as supernatural punishment, as demonic possession, and as the result of natural causes. For the Greeks, disease could be gratuitous or it could be deserved (for a personal fault, a collective transgression, or a crime of one's ancestors).

> Cresseid's leprosy in Henryson's The Testament of Cresseid and Madame de Mertevil's smallpox in Les Liaisons dangereuses show the true face of the beautiful liar--a most involuntary revelation (cited in Sontag, 1977, p. 43).

Sontag (1977) recognized other features of tuberculosis to cancer--the agonies that cannot be romanticized. Not tuberculosis but insanity is the current vehicle of our secular myth of self-transcendence. The romantic view is that illness exacerbates consciousness. Once that illness was tuberculosis; now it is insanity that is thought to bring consciousness to a state of paraoxysmic enlightenment. The romanticizing of madness reflects in the most vehement way the contemporary prestige of irrational or rude (spontaneous) behavior (acting-out), of that very passionateness whose repression was once imagined to cause tuberculosis, and is now thought to cause cancer (Sontag, 1977).

Sontag (1977) acknowledged cancer to be an unresolved riddle, although it is generally agreed to be multideterminded. A variety of factors--such as cancer-causing substances (carcinogens) in the environment, genetic make-up, lowering of immunodefenses (by previous illness or emotional trauma, characterological predispoisiton--are held responsible for the disease. Many researchers assert that cancer is not one but more than 100 clinically distinct diseases, that each cancer has to be studied separately, and what will eventually be developed is an array of cures--one for each of the different cancers.

Like Freud's scarcity-economics theory of "instincts," the fantasies about tuberculosis which arose in the last century are echoed by Sontag's (1977) language, describing cancer as evoking an economic catastrophe: that of unregulated, abnormal, incoherent growth. The tumor has energy not the patient; "it" is out of control. Cancer cells, according to textbook accounts of Shafer, Sawyer, McCluskey, and Beck (1975) have cells that shed the mechanism which "restraints" growth. Cells without inhibitions, cancer cells will continue to grow and extend over each other in a "chaotic" fashion destroying the body's normal cells, architecture, and functions. Sontag (1977) described cancer in images that sum up the negative behavior of 20th century "homo economicus"; i.e., abnormal growth, repression of energy, that is refusal to consume or spend.

The plague in Book I of the Iliad that Apollo inflicts on the Achaeans of Chryses' daughter; the plague in Oedipus that strikes Thebes because of the polluting presence of the royal sinner; or to a single person (the stinking wound in Philoctetes foot). Sontag (1977) related diseases around which the modern fantasies have gathered tuberculosis and cancer--are viewed as forms of self-judgment, or self betrayal. A federal law

the 1966 Freedom of Information Act, cited "treatment of cancer" in a clause exempting from disclosure matters whose disclosure "would be an unwarranted invasion of personal privacy." It is the only disease mentioned.

According to Blackwell (1963) and Green and Roberts (1974) it was suggested that delay in seeking diagnosis for cancer symptoms may reflect a conflict between (a) a strong feeling of susceptibility to what is regarded as a most serious disease, and (b) a real conviction that there are no efficacious methods of prevention and/or control. Kegeles, Kirscht, Haefner, and Rosenstock (1965) investigated relationships among the use of early detection of cancer. Beliefs in benefits were measured by responses to questions of early diagnosis versus delayed treatment for cancer and on opinions as to whether medical checkups or tests could detect cancer before the appearance of symptoms. An analysis of the findings disclosed that personal characteristics and beliefs each make independent contributions to the understanding of behavior. Tests were much more likely to have been taken by women who were relatively young, age 35-44, Caucasian, of higher income, married, relatively well educated, and who reported higher occupational levels (using husband's occupation in the case of married women).

Antonovsky and Hartman (1974) contrarily suggested characteristics of those who delay in seeking diagnosis and treatment of cancer as being older, of low educational status, and at least in some studies, males. Fink, Shapiro, and Roester (1972) provided data that suggested that the perception of personal vulnerability to cancer and a concern with its severity distinguish participants from non-participants in a breast cancer screening program.

Vachon, Freedman, Formo, Lyall, and Freeman (1977) compared widows of cancer patients with widows in general and with widows of men with chronic cardiovascular disease in particular. Special attention was given to the vicissitudes of the final illness. Despite the recent emphasis on the need for open communication about the impending death between the dying patient and his family, interviews with 73 women whose husbands had died of cancer revealed that 40% of those who had been told their husband was dying refused to accept the warning. Only 29% of the couples openly discussed the possibility of the husband dying of his disease. More than one-half of those who did not talk with their husbands about the impending death reported that this made no difference to their initial adjustment to bereavement. The stress for

a woman of her husband's final illness leads to an especially difficult bereavement period; for example, significantly more widows of cancer patients than of patients with other illnesses perceived themselves to be in poor health during the initial bereavement period (Vachon et al., 1977).

Spouse's Family Health Belief Relationships

The relative importance of the family during illness has been identified in Suchman's (1965) study of 137 cases in which each subject had been hospitalized at least 1 day, incapacitated for at least 5 days, and required three or more physician visits within the preceding 2 months. The structure of the investigation was divided into 5 sequences of medical events as stages of illness:

1. The symptom experience stage.
2. The assumption of the sick role stage.
3. The medical care concept stage.
4. The dependent-patient role stage.
5. The recovery or rehabilitation stage.

In the first stage, a positive correlation was drawn between the severity of symptoms and the seeking of medical consultation. This finding may be related to

the problem of much-delayed recognition of chronic and degenerative diseases which lack serious and incapacitating initial symptoms (Suchman, 1965). Assumption of the sick role, the second stage of illness, usually involves the individual's discussion of his symptoms in seeking approval "to be sick." With the recognition of initial symptomotology, 91% of the subjects discussed their ailments, 84% with a relative, 53% of whom were spouses. This finding was a favorable commentary on the family and seemed to indicate that individuals need support and reassurance from their families in order to recognize and accept illness, relinquish social responsibilities, and seek medical care (Suchman, 1965).

During the medical care contact stage, 76% of the subjects discussed medical recommendations with someone, 50% with the spouse, and 20% with another relative (Suchman, 1965). Twaddle's (1969) study of 605 marital dyads in which the husband was between 64 and 69 years of age substantiated the significance of the spouse in defining the sick role; however, once a physician was contacted, he became solely responsible for the definition of the sick person. During the fourth stage, that of dependent-patient role, a number of concerns of each subject was elicited. The prevailing concerns, 59%, related to the

illness itself. Second in importance was social concerns, 50%, followed by financial concerns, 37%. Regarding the family, only 25% were concerned about their ability to carry out family responsibilities; 3% or less were concerned about losing their place in the family or the affection of the spouse and/or children (Suchman, 1965).

The recovery and rehabilitation stage found 94% of the subjects convalescing in their own homes--of these 55% were able to care for themselves, while the remainder were being cared for by a member of the household (Suchman, 1965). When a family member is in the sick role, alteration of other family roles and patterns are necessitated. The degree and permanence of role changes have a direct bearing on the impact of illness to the family unit (Bell, 1966; Farber, 1964).

In a study of 201 subjects with one or more chronic illnesses as the primary diagnosis, Kassebaum and Baumann (1965) found the following dimensions of the sick role characteristic of chronic illness:

1. The impossibility of full resumption of role participation at pre-illness levels.

2. The necessity of adjusting to a permanent condition.

3. The emphasis on retaining an optimal level of role performance rather than regaining the level of pre-illness role performance.

In a survey of 235 wives married to disabled spouses, Ludwig and Collette (1969) found that 79 men were dependent on their wives for assistance in activities of daily living such as bathing, dressing, and getting around the house; approximately one-half of the men were between 45 and 60 years of age. In these 79 dyads:

1. The husband had a significantly less voice in decision-making than husbands who were not dependent on their wives for physical care.

2. The husband and wife spent more time together since the onset of the disability.

3. The husband and wife spent less time with relatives and friends (Ludwig & Collette, 1969).

Klein, Dean, and Bogdonoff (1967) interviewed and administered a battery of questionnaires to 121 patients and 73 spouses to explore the nature and extent of involvement of the patient's spouse during the illness situation; a variety of chronic medical and psychosomatic disorders was represented in the group of patients. Several pertinent findings support the postulate that

illness exerts a significant effect upon the "well" family members:

1. Sixty-seven percent of the spouses reported an increase in symptoms during the patient's illness, most often citing nervousness, tiredness, and feelings of fatigue.

2. Eighty percent of the patients and 56% of the spouses had more role tension during illness.

3. There was a significant correlation between psychophysiologic symptoms and role tension for both patients and spouses.

4. The level of role tension in spouses showed a positive and significant correlation with the number of symptoms they indicated were present in the spouse.

5. Reports of work reduction of the patient by the spouse and the patient were positively correlated (Klein et al., 1967).

While the patient's actions and the degree and manner in which he assumes former responsibilities are important factors in determining family adjustment, the effect an illness has upon family members must be considered in planning to meet the psychological and physical needs of both the patient and his family (Calahan, 1966; Cogswell & Weir, 1964; Deutsch & Goldston,

1960; Field, 1958; Gordon & Kutner, 1965; Klein et al., 1967).

A study by Henley and Davis (1967) on more than 200 chronically ill persons over 60 years of age demonstrated that the quality of family relationships had a significant bearing on the individual's state of satisfaction. This probably was indicative of a more wholesome acceptance of the sick role.

As the primary and most important social group encountered throughout life, the family is the structure within which an individual is appreciated and responded to for what he is (Calahan, 1966). Goode (1964) identified the strategic significance of the family as the mediator between an individual and society. Vincent (1966) has suggested a trio of hypotheses indicative of society shaping families rather than vise versa.

1. Social institutions or systems other than the family adapt to the degree that such adaptation is in the interest of their respective goals.

2. If there is a conflict of interests or goals, it is in the family which gives in and adapts.

3. The family adapts for lack of an alternative and in doing so serves the goals of other social systems

and facilitates the survival of a society based on social change.

During the 100 years from the middle of the 19th to the present century, seven trends in family life have been identified by Bossard and Boll (1950):

1. From predominance of religious to predominance of the secular.

2. From a large group to a small group.

3. From an adult-centered to a child-centered family.

4. From a stable to a mobile group.

5. From a communal family-ideology to a democratic one.

6. From an integrated to an individualized group.

7. From a neighborhood-enclosed family to one isolated in an urban environment.

The home is often the first element in nursing care; assumption of the nursing role involves both physical and emotional care of the ill family member. With incapacitating illness, family members may have more difficulty in assuming the nursing role (Mabrey, 1964). It has been suggested that a particular problem of the American family is to find and maintain the optimal balance between being overly sympathetic and excessively

intolerant of an ill member (Fink, Skipper, & Hallenbeck, 1968; Parsons & Fox, 1952). Parsons and Fox (1952) argue the case for extra-familial care of the sick in American society on the following basis:

1. Protection of the family against the disruptive effects of the illness of its members.

2. Preservation of some of the positive functions of the sick role as a mechanism of social control--primarily, by directing the passive deviance of illness into closely supervised medical channels where it finds expression but cannot easily spread.

3. Facilitation of the therapeutic process--not only technologically, but in a motivational sense as well.

Litman (1966) identified via an intensive analysis of the therapeutic performances for 100 persons suddenly disabled orthopedically, an effort to correlate response to rehabilitation with family integration and solidarity. A direct association between response to rehabilitation and family solidarity was not evident, although 67.3% of the subjects with a good response to rehabilitation were from reportedly well integrated families, the absence of such family relationships tended to have no bearing on therapeutic performance and initiative (Litman, 1966).

However, therapeutic performance was positively related to family orientation in that 64% of the subjects who looked forward to re-entering an established family constellation showed good response to rehabilitation (Litman, 1966). Deutsch and Goldston (1960) interviewed families of 40 persons who had been returned to the home environment with residual paralysis as a result of poliomyelitis. The best predictor of satisfactory adjustment was found to be the person's social role in the family prior to and after the disability. The return of a severely disabled husband and father seemed to cause a maximum change and disorganization in family life due to the distance between prescription and potential role fulfillment.

In a study of 36 marital dyads in which the wife was disabled, Fink et al. (1968) demonstrated that each family member holds a set of belief expectations for the disabled partner. The following social and psychological patterns emerged from the research:

1. The extent of disability may not be indicative of problems concerning need-gratification.

2. All levels are likely to be present simultaneously, rather than one set of needs predominating to the exclusion of others.

3. The disability may encompass different psychological meanings for the woman and members of her family--these may not be adequately communicated among them.

4. The disability affects not only the woman's social relationships, but also those of other family members (Fink et al., 1968).

Croog, Koslowsky, and Levine's (1976) study examined personality self-rating of 283 married men who had recently experienced a myocardial infarction and who previously had been free from major disease. Similar data were collected from their "non-cardiac" wives. Results indicated that several traits often identified as descriptive of "coronary-prone" personality traits did not generally have wives with these traits. Husbands and wives tended to agree regarding each other's personality self-rating.

Although there are various theories concerning the congruence of personality of marital partners in long-term marriages, the data are consistent and generally limited. In examining the question of similarity of traits in husbands and wives, and if the principle of homogony were operative, this would suggest that the

"prevention prone" husband might be influenced by his "prevention prone" wife.

The data of Croog et al. (1976) explored the question as to whether husbands and wives from marital pairs have patterns of similarity in their personality traits. In more general terms, are the people who are in stable long-term marriages likely to characterize themselves as similar in personality?

Croog et al. (1976) clearly showed that there is no significant pattern of marital pairing of persons with similar personality characteristics as measured by their ratings. Thus, in their data, knowledge about one partner does not appear to permit prediction of the personality traits of the other, although there is a marked concensus in self rating. In other words, husbands and wives display a pattern of supporting the other's self image.

Mlott and Lira's (1977) study hypothesized that individuals in unstable marriages were more dogmatic, more externally controlled, and evidenced more dissimilarity in life-motivating goals than those in stable marriages. Two groups of 22 married couples (designated married-stable and married-unstable) were administered the Rokeach Dogmatism Scale (cited in Mlott & Lira,

1977), the Rotter I-E Scale (cited in Mlott & Lira, 1977), and the Hahn California Life Goals Evaluations Schedules (cited in Mlott & Lira, 1977). Although results did not support any of the three hypotheses stated, the findings led to three significant conclusions. First, dogmatic traits that were expected to be predominant in unstable marriages actually were seen as a stabilizing factor when demonstrated by the female spouse. Second, wives in unstable marriages demonstrated greater external locus of control than their husbands. Third, dissimilarity of life goals did not necessarily contribute to marital discordance, but actually was associated with marital stability unless it included the motivational areas of leadership and independence.

There were no significant differences between married-unstable and married-stable participants on the locus of control measure. When the groups were examined separately, wives in the married-unstable group achieved significantly higher I-E scores than husbands, which indicates a greater tendency for wives to view events as determined by fate, chance, or powerful others. No significant discrepancies were observed in the locus of control scores achieved by wives and husbands in the married-stable group.

Rotter and Mulry's (1965) study indicated that individuals differ reliably in the degree to which they perceive reinforcement in a variety of ambiguous social situations to be controlled by their own characteristics and/or behavior versus by external forces. Such differences have been observed in children and adults and appear to be generalized over a wide variety of social situations.

In Aho's (1977) study, there was an inverse relationship between the respondent's rankings on the preventive health orientation continuum and how serious they perceived the disease to be. More than twice the percentage of wives who were high on the continuum regarded the chance of a person with heart disease to lead a normal life as "about average." This result is consistent with the observations of Becker, Kaback, Rosenstock, and Ruth (1975) of higher levels perceived seriousness among non-participants than participants in a genetic screening program.

Moody and Gray (1972) found that social integration is measured by both social participation and alienation was "an important antecedent of the willingness of subjects to receive oral polio vaccine" (p. 251). Social integration proved to be more influential than social

economic status, which did not have an independent relationship with acceptance of the vaccine. Moody and Gray (1972) suggested that efforts to reduce alienation and anomie and to increase people's integration into community life may be an effective tactic for achieving more participation in preventive health measures.

Aho's (1977) research

> with a chi-square as a measure of statistical significance and Cramer's V as a measure of the strength of relationships, statistically significant support was found for the relationship between the wives' preventive health orientation and their perceptions of (a) the seriousness of heart disease, (b) their spouses' susceptibility to it, (c) the effectiveness of treatment, and (d) the disease's preventability (all variables in the health belief model). (p. 71)

Also included were the variables of orientation and place of residence, years of education, and both the respondent's and husband's age. "The relationships, however, were not very strong" (Aho, 1977, p. 71).

Croog and Richards (1977) conducted a longitude study from the data of 205 males and their wives for comparison of smoking by two relatively distinctive populations, one with personal experience of the heart attack, the other without this experience, but with the opportunity of observing the course of the illness through the associations of marriage and sharing of the home.

Predisposing factors of susceptibility, threat, and power of prevention were drawn from the conceptual framework of the Health Belief Model. As cues to courses of action, Croog and Richards (1977) suggested preventive behavior alternatives which are evaluated and incorporated into the patient's decision to act. Kirscht (1974) viewed the perception of threat as consisting of two components: (a) negatively-valued outcome and (b) the expectancy of occurrence of this outcome.

Croog and Richards' (1977) approach linked in part to current literature on locus of control, in which internal-external or personal-environmental dichotomies were set forth, dealt with types of variables drawn from internal or personal dimensions of control. Twenty-one percent of the wives acknowledged their own capacity to intervene in a preventive way in the illness of their husbands. Although based upon only a segment of the spouse population, these figures indicate a strong belief in the possibility of intervention by either marital partner.

In the Health Belief Model and in other theoretical conceptions concerning preventive behavior, a primary element is the perception of symptoms as stimuli. Croog

and Richards (1977) suggested that these symptoms are seen by the prevention-oriented individual as associated with the threat to which he is susceptible, and he then takes preventive action. Thus, in the two populations--husbands and wives during the first year following a heart attack--there were similar patterns of belief and attitudes concerning smoking and personal vulnerability--a component in the element of threat.

Powerful Others

A definition of "powerful others" is very vague in the literature so the researcher chose for the study an intimate kin or spouses as being closest to the individual, with whom he would be considered to have a primary relationship, as a "powerful other." Johnson, Dabbs, and Leventhal (1970) interpreted their findings as evidence "that the belief that one can control one's environment is associated with the ability to influence others so as to achieve one's own ends" (p. 26).

Various behaviors of family members are elicited in compliance with that group's goals and philosophy, which are expressed as a product of one's interrelationship with family members and significant others (Hall & Weaver, 1977). Thus, the family serves to condition the

individual in various role behaviors and in development of a self-concept.

The concept of "defensive externality" (Hochreich, 1974; Phares, 1976) is one which has not been looked at with health locus of control, but is well worthy of future consideration. A defensive-external is a person who endorses external belief statements, but acts as one would theoretically predict for an internal. If this phenomenon does occur with multidimensional health locus of control measures, it is more likely to lead to endorsement of chance or powerful other beliefs. For health prediction, powerful others seemed a particular important dimension.

An example of powerful other influences is the situation of a person experiencing unpleasant side effects after taking medication prescribed by a physician. A person with strong beliefs in external control by powerful others might be expected to continue taking the medication, especially if he or she also had a high trust in physicians. Given the same situation, a high scorer with chance might abandon the medication entirely. A person with strong beliefs in internal health locus of control might carry out a self-study by going off the medication for a day or two, noting the difference, then

resuming the medication to see if the side effects re-appear.

Since Wallston's Health Locus of Control scales appeared to be internally consistent (although the original alpha reliability of .72 dropped considerably when the scale was used with later samples, ranging from .40 to .54), little consideration was given at the time of the possibility that more than one dimension of locus of control was represented in the scale. However, Collins (1974) and Gurin, Gurin, Lao, & Beattie (1969) had evidence supporting the multidimensionality of the generalized locus of control scale and further Health Locus of Control data analyses suggested the need to explore the dimensionality issue.

Questioning the conceptualization of locus of control as unidimensional construct, Levenson (1974) argued that not only are internal beliefs orthogonal to external beliefs but understanding and prediction could be further improved by studying fate and chance expectations separately from external control by powerful others. Levenson (1973, 1975) developed three 8-item Likert-type scales (Internal, Powerful Others, and Chance--I., P., and C.) to measure generalized locus of control beliefs and demonstrated initial evidence of their discriminant validity.

Levenson's (1974) Powerful Others and Chance scales were moderately intercorrelated (r = .59, a finding which Rotter (1975) interpreted to support his contention that externality is a single factor), but were essentially independent of scores on the I scale. Like Rotter's I-E scale, Levenson's (1974) new scales did not include items specific to expectations about health; yet, she demonstrated the utility of measuring three distinct dimensions of locus of control, there was reason to explore this approach in predicting health behaviors utilizing health-specific locus of control scales.

Of the six internally worded items on the original HLC scale, only one, "I can only do what my doctors tell me to do," was conceptually related to the dimension of powerful other externality. Thus, new items tapping this dimension were necessary. Starting with the 11 items which constituted the original HLC scale, new items were written which, on a priority basis, reflected three dimensions of Health locus of control beliefs and internality (IHLC); powerful others (PHLC); and chance (CHLC), and externality. Descriptive information (means, standard deviations, and alpha reliabilities, a measure of a scale's internal consistency) for the Multidimensional

Health Locus of Control (MHLC) sales is included in the following tables:

Powerful Others Health Locus of Control (PHLC)

Form A	Form B
3. Having regular contact with my phsyician is the best way for me to avoid illness.	3. If I see an excellent doctor regularly, I am less likely to have health problems.
5. Whenever I don't feel well, I should consult a medically trained professional.	5. I can only maintain my health by consulting health professionals.
7. My family has a lot to do with my becoming sick or staying healthy.	7. Other people play a big part in whether I stay healthy or become sick.
10. Health professionals control my health.	10. Health professionals keep me healthy.
14. When I recover from an illness, it's usually because other people (for example, doctors, nurses, family, friends) have been taking good care of me.	14. The type of care I receive from other people is what is responsible for how well I recover from an illness.
18. Regarding my health, I can only do what my doctor tells me to do.	18. Following doctor's orders to the letter is the best way for me to stay healthy.

Source: Wallston, K. A., & Wallston, B. S. Development of the multidimensional health locus of control (MHLC) scales. Health Education Monographs, 1978, 6(2), 164.

Note: Appendix F contains permission for use of table.

Descriptive Data on Scales

Scale	# of Items	Mean	sd	Alpha
MHLC				
Form A	6	19.991	5.221	.673
Form B	6	20.974	5.487	.715
Forms A & B	12	40.965	10.048	.830

Source: Wallston, K. A., & Wallston, B. S. Development of the multidimensional health locus of control (MHLC) scales. Health Education Monographs, 1978, 6(2), 164.

Note: Appendix F contains permission for use of table.

As can be seen in the above table, alpha reliabilities for the MHLC scales (6-item forms) ranged from .673 to .767 and when Forms A and B were combined into 12-item scales, the alpha reliabilities increased (.830 to .859). Wallston and Wallston (1978) reported a low positive correlation with appropriate Internal, Powerful Others, and Chance scales represented initial construct validity. Correlations in the predicted direction of the Multidimensional Health Locus of Control scales with health status provided some evidence of predictive validity. However, the extent of the validity and reliability of the MHLC instrument will not be fully known until they are appropriately used in a number of studies.

Wallston and Wallston (1978) concluded that in utilizing the Multidimensional Health Locus of Control Scales, it was important to keep in mind that theoretical and empirical underpinnings continue with the Health Locus of Control Scales. As a health-specific indicator of generalized expectancy of locus of control of reinforcements, based on Rotter's Social Learning Theory, there is no reason to expect that Multidimensional Health Locus of Control Scale scores alone should explain much of the obtained variance in health behaviors. Only in interaction with one, or preferably more, or a multitude of contributing factors will beliefs in the locus of control of health play a significant role in the explanation of health behavior. Wallston & Wallston (1978) cited examples of other contributing factors such as perceived severity and susceptibility; health motivation, social supports; previous behaviors; attitudes toward health professionals; perceived costs and benefits or specific actions; demographic factors such as race and social class; and most importantly, the value of health as a reinforcement.

Summary

A review of the literature has been presented that is concerned with "powerful others" and what factors are inherent such as spouses and family relationships in regard to cancer health beliefs noted in the society. Whether or not the multidimensional approach to the measurement of health locus of control will provide more precise and conceptually relevant predictions than were previously possible with only a unidimensional approach is an empirical question. However, it is one which should be a challenge to anyone seeking a greater understanding of why there is such a variance in health behaviors from individual to individual and from situation to situation.

CHAPTER 3

PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

This was a descriptive, correlational research study. The primary purpose of this type of research is to make inferences about relationships among variables, without direct intervention (Kerlinger, 1973). These variables, studied in this research study were: spouses with heterogeneous health locus of control orientation and dyads with homogeneous health locus of control orientation and cancer health beliefs.

Setting

The study was conducted among clients who lived in a metropolitan city in a Southwestern state in the United States. Residents from many ethnic backgrounds were interviewed in their own homes and at nutritional centers. Nutritional centers are open to any county resident over 55 years of age wishing to attend either for social functions or the mid-day meal or both. There is a total of 35 centers serving approximately 10,500 senior citizens per day from various ethnic or educational background.

Population and Sample

Minium (1970) referred to population as the complete set of observations (measures) from which to draw conclusions. The population from which the sample was derived was composed of all persons who met the study criteria and who attended nutrition centers in the chosen city. Kerlinger (1973) categorized "accidental or convenient" nonprobability sampling as one which takes available samples at hand. The sample was 40 couples in which at least one partner was attending a nutritional center in the metropolitan city, and both were literate and could visualize the print. Kerlinger (1973) stated non-probability samples do not use random sampling. Only those couples in which both the husband and wife were over the age of 55 years were chosen, then the pair of spouses was interviewed.

Protection of Human Subjects

The Texas Woman's University Subjects and Review Committee determined whether the study, which involved human subjects, met the criteria of the current guidelines, and was in accordance with the regulations outlined in "Protection of Human Rights" from the Department of Health, Education, and Welfare (Appendix A). A written

and signed Consent to Act as a Subject for Research and Investigation was obtained from each subject prior to inclusion in the study indicating voluntary participation and anonymity. Participants were requested not to write their names on the answer sheets to insure that the participants would remain anonymous. The subjects' answer sheets were coded numerically with a number assigned to represent each couple. The subjects were protected from any possible embarrassment by maintaining the confidentiality of the results of the correlations found. Subjects could withdraw from the study at any time without penalty (Appendix B). Written consent was also obtained from the participating agency (Appendix C). Subject anonymity was maintained by coded sheets and raw data remained, at all times, under the control of the investigator. The source of identification for records was destroyed after data were collected and coded, maintaining confidentiality and anonymity at all times.

Instruments

Two research instruments were utilized in this study. Wallston's Health Locus of Control (HLC) Scale (Wallston et al., 1976) (Appendix D) which is a health area specific measurement of expectancies regarding

locus of control developed for prediction of health-related behavior was the first of these instruments. The second instrument was developed by the researcher (Appendix E) and is based on Becker's Health Belief Model.

Normative data are provided from the Health Locus of Control instrument. This instrument uses a 6-point, Likert-type, forced choice format. The 11-item devised scale has a potential scoring range of 11 to 66. Two experiments conducted by Wallston et al. (1976) showed discriminant validity of the Health Locus of Control instrument in contrast with Rotter's Internal-External Locus of Control Scale. In Study 1, Health Locus of Control internals who valued health highly sought more information than other subjects. In Study 2, subjects in weight reduction programs which were consistent with their locus of control orientation (as assessed by the HLC Scale) were more satisfied with the programs than were "mismatched" subjects. For the original sample the mean was 35.57 and the standard deviation was 6.22. Alpha reliability of the 11 items was .72. Furthermore, the test-retest reliability of the Health Locus of Control over an 8-week interval for subjects in Study 2 was

.71. The score will give a measure of either an internal or external health locus of control orientation.

The second instrument developed by the researcher uses variables of Becker's Health Belief Model. Becker's (1974) four variables of (a) barriers, (b) benefits, (c) severity, and (d) susceptibility are scrambled in the 16 items. The instrument has items scored from "strongly disagree" to "strongly agree," using a 6-point Likert-type forced choice format. The 16 items have a potential scoring range of 16 to 96. A low score indicates negative or low health beliefs, while a high score indicates positive health beliefs. According to Gray's Health Belief Index, a pilot study was planned and conducted. No revisions were necessary. A panel of experts reviewed the Gray's Health Belief Index for content validity. This panel of experts consisted of three members with advanced qualification in the nursing field. Their recommendation was to use the instrument as submitted.

Data Collection

Permission to collect data for the study was obtained from Texas Woman's University Human Research Review Committee. The director of the nutritional center

was contacted to obtain agency permission. When agency permission was granted, center managers and prospective participants were contacted, given a brief description of the study, and an informed consent form was signed. The researcher was available to answer any questions and explain possible risks to prospective participants. Those subjects who agreed to participate in the study were asked to sign the informed consent form. The sample was selected by the self-selection method.

> Subjects can "assign themselves" to groups, can "select themselves" into groups on the basis of characteristics. . . . These characteristics may be extraneous to the research problem or are otherwise related to the variables of the research problem. (Kerlinger, 1973, p. 381)

The researcher began visiting the nutritional centers to assess the health locus of control and cancer health beliefs of each participant. At each sitting with one of the partners, the researcher collected the data relevant to the assessment of health locus of control and cancer health beliefs using two data collection tools. If only one spouse was attending the nutritional center, the researcher went to the residence to obtain data from the other partner. The group was composed of

married couples 55 years of age or older and married at least 5 years.

Treatment of Data

Having determined the subjects' total scores on the Health Locus of Control Questionnaire and the Gray's Health Belief Index, the researcher developed a list of ordered pairs. The ordered, paired data were presented in graph form to demonstrate the relationship between a husband's or wife's health locus of control and their cancer health beliefs. The overall extent and significance of the relationship between the two variables were established through the use of Pearson's product-moment correlation. The .05 level of significance was used. After the analysis of the data had been completed, the results were interpreted within the existing body of literature.

CHAPTER 4

ANALYSIS OF DATA

A correlational study was conducted to determine if there were relationships between two variables: health locus of control dichotomized as internalist or externalist and health beliefs about cancer. The overall extent and significance of the relationship between the two variables have been established through the use of Pearson's product-moment correlation. This chapter reports the analysis of data gathered by use of two questionnaires: (a) the Wallston's Health Locus of Control and (b) Gray's Health Belief Index. A total of 40 couples participated as subjects in the study with 39 couples providing usable data.

The Sample

The sample consisted of 40 couples in which at least one partner was attending a nutritional center in the metropolitan city of Dallas. Only those couples in which both the husband or wife were 55 years of age or over were interviewed. Couples from many ethnic

backgrounds were interviewed both at the nutritional center and in their own homes.

Table 1 shows the demographic data of age and length of marriage for the 40 couples who provided data in the research study. The data for one couple were not usable; therefore, it was discarded and 39 sets of data comprised the total. The mean and standard deviation along with the minimum and maximum are given in Table 1 for each demographic variable.

Table 1

Demographic Data of Sample

Variable	$\bar{X}$	SD	Min.	Max.
Age--Husband	73.8205	6.7585	60	91
Age--Wife	69.5128	7.1997	55	87
Length of marriage	40.2821	15.6511	5	68

Table 2 shows the health locus of control data provided by Wallston's Health Locus of Control tool. The mean score for the locus of control for husbands and wives was almost identical. The mean of 35.57 based on the experiment conducted by Wallston et al. (1976) is not significantly different from the mean obtained

in this investigation. The mean from Wallston et al. (1976) was used to identify high and low health locus of control (i.e., > 35.5 was high; < 35.5 was low). From this data, 22 homogeneous pairs and 17 heterogeneous pairs of data were produced.

Table 2

Health Locus of Control Orientation Data

Variable	$\bar{X}$	SD	Min.	Max.
HLOC--Husband	36.9231	4.3793	28	48
HLOC--Wife	36.2564	5.2602	27	55

n = 39.

Findings

Major Hypothesis

The major hypothesis stated: There is no significant relationship between health beliefs of husbands and wives and the health locus of control orientation of the pairs.

Figure 1 shows the relationship between a husband and wife's cancer beliefs for the 22 homogeneous pairs. The overall extent and significance of the relationship between the health locus of control and health beliefs related to cancer was established through the use of Pearson's product-moment correlation. For the 22

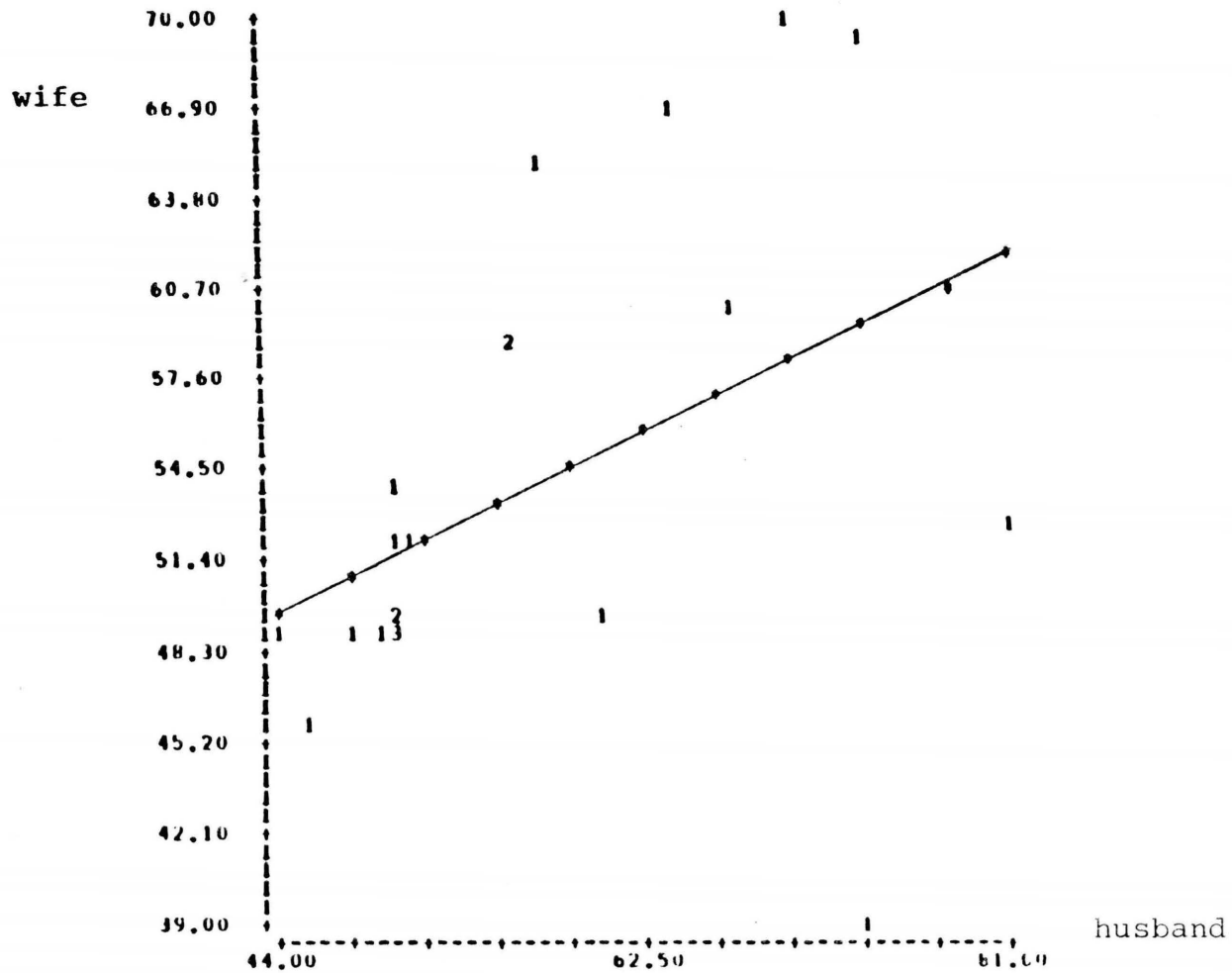

Figure 1. Graph of husband health belief score versus wife health belief score for homogeneous pairs. (n = 22). Note. "*" indicates regression line. Numbers are observed points.

homogeneous pairs of ordered data, Pearson's product-moment correlation coefficient was determined to be $r = .425$, $p = .048$. Therefore, the major hypothesis was rejected. It is concluded that a relationship exists between the health belief scores of the husband and wife when the locus of control is homogeneous within the couple.

Minor Hypothesis 1

Minor hypothesis 1 stated: There is no significant relationship between those spouses who have homogeneous health locus of control orientation in relation to their health beliefs about cancer.

The mean standard deviation, minimum, and maximum of the scores on Gray's Health Belief Index is shown in Table 3. As shown, there is only a slight difference in husband's scores and wife's scores concerning Gray's Health Belief Index.

Table 3

Homogeneous Scores on Gray's Health Belief Index

Variable	$\bar{X}$	SD
Husband's scores	56.5909	10.2987
Wife's scores	54.0455	8.0266

n = 22.

Minor Hypothesis 2

Minor hypothesis 2 stated: There is no significant relationship between those spouses who have heterogeneous health locus of control orientation in relation to their health beliefs about cancer.

The data were treated in a manner similar to that for Minor Hypothesis 1. High locus of control was considered > 35.5; conversely low was < 35.5. A total of 17 heterogeneous pairs of ordered data were plotted in Figure 2.

For the 17 heterogeneous pairs of ordered data, Pearson's product-moment correlation coefficient was determined to be $r = .473$, $p = .055$. Thus, this hypothesis is not rejected at the .05 level of significance. However, the p value obtained suggests that there is a relationship between health beliefs concerning cancer between husbands and wives who have a heterogeneous locus of control orientation (Table 4).

Table 4

Heterogeneous Scores on Gray's Health Belief Index

Variable	$\bar{X}$	SD
Husband's score	54.4706	10.0755
Wife's score	54.1176	8.9504

n = 17.

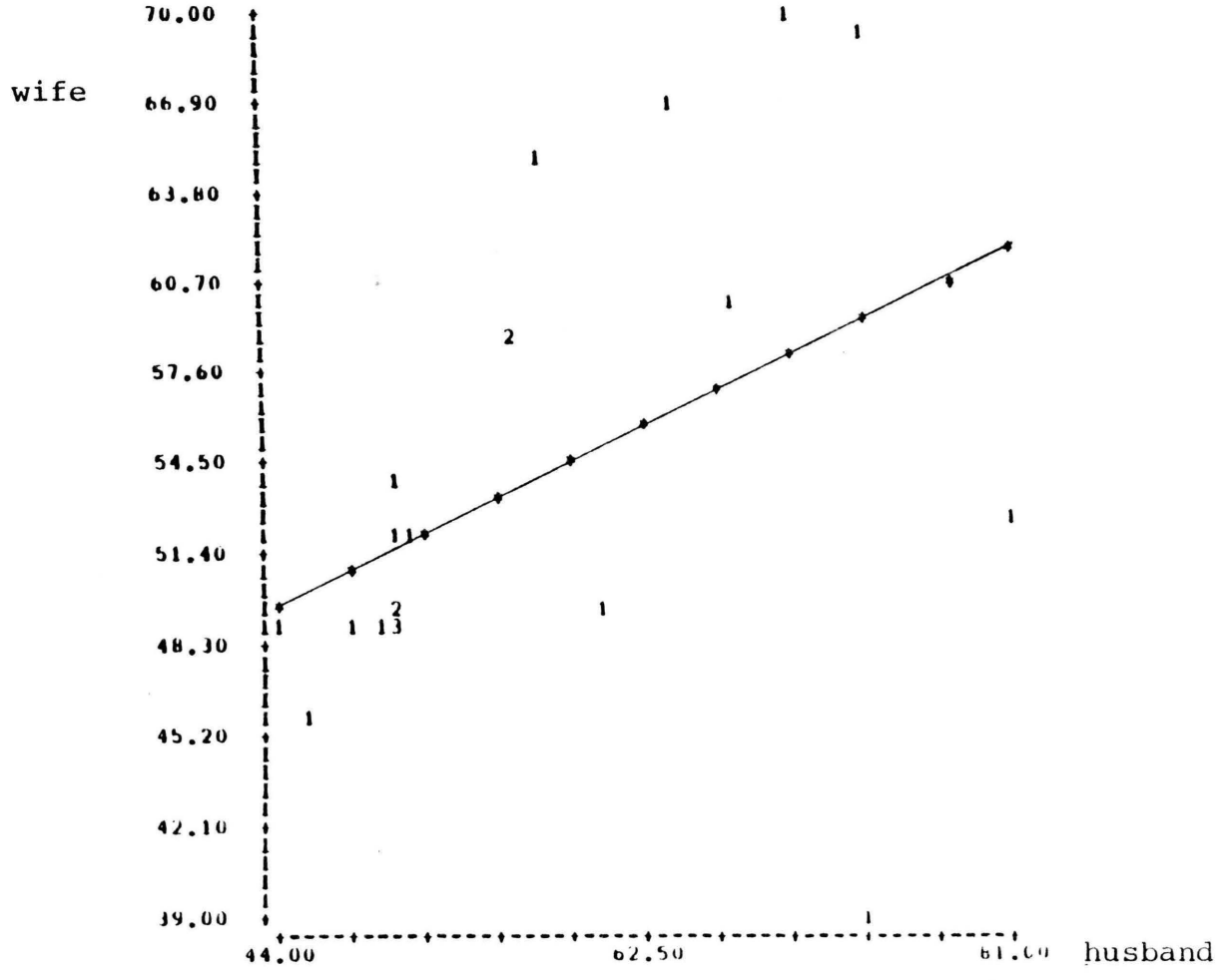

Figure 2. Plot of the husband health belief scores against the wife health belief scores for the 17 heterogeneous pairs. (n = 17).
Note. "*" indicates regression line. Numbers are observed points.

Table 5 refers to total scores for husbands and wives on Gray's Health Belief Index. The husbands' mean score was 55.6667 and wives' with similar mean scores of 54.0769. There was a wide variance of husbands' standard deviation of 10.1238 and wives of 8.3268.

Table 5

Total Scores on Gray's Health Belief Index

Variable	$\bar{X}$	SD	Min	Max.
Husbands' score	55.6667	10.1238	42	81
Wives' score	54.0769	8.3268	38	70

$n = 39$.

Additional Findings

In further analysis, Table 6 summarizes the regression equations for homogeneous groups and heterogeneous groups respectively. The wife's health belief scores

Table 6

Regression Equations

Homogeneous Groups	$Y = 35.28 + 0.3315(X)$	$p = .048$
Heterogeneous Groups	$Y = 31.25 + 0.4199(X)$	$p = .055$

related to cancer are indicated by Y, while X indicates the husband's health belief scores.

The similarity between the two equations was noticed. The next step was to combine the data from all 39 pairs and determine if a significant relationship existed. A regression equation that takes into account all pairs regardless of the health locus of control variables is:

$$Y = 33.80 + .3643X$$

Figure 3 shows a graph of the data for all groups. The Pearson product-moment correlation coefficient was determined to be $r = .443$, $p = .005$. Therefore, one might conclude that a relationship exists between cancer health beliefs of husbands and wives regardless of the locus of control orientation of the pair.

Summary of Findings

The following summarizes the findings of this study:

1. A relationship existed between the cancer health beliefs of husbands and wives regardless of the locus of control orientation of the pair for the total population in this study.

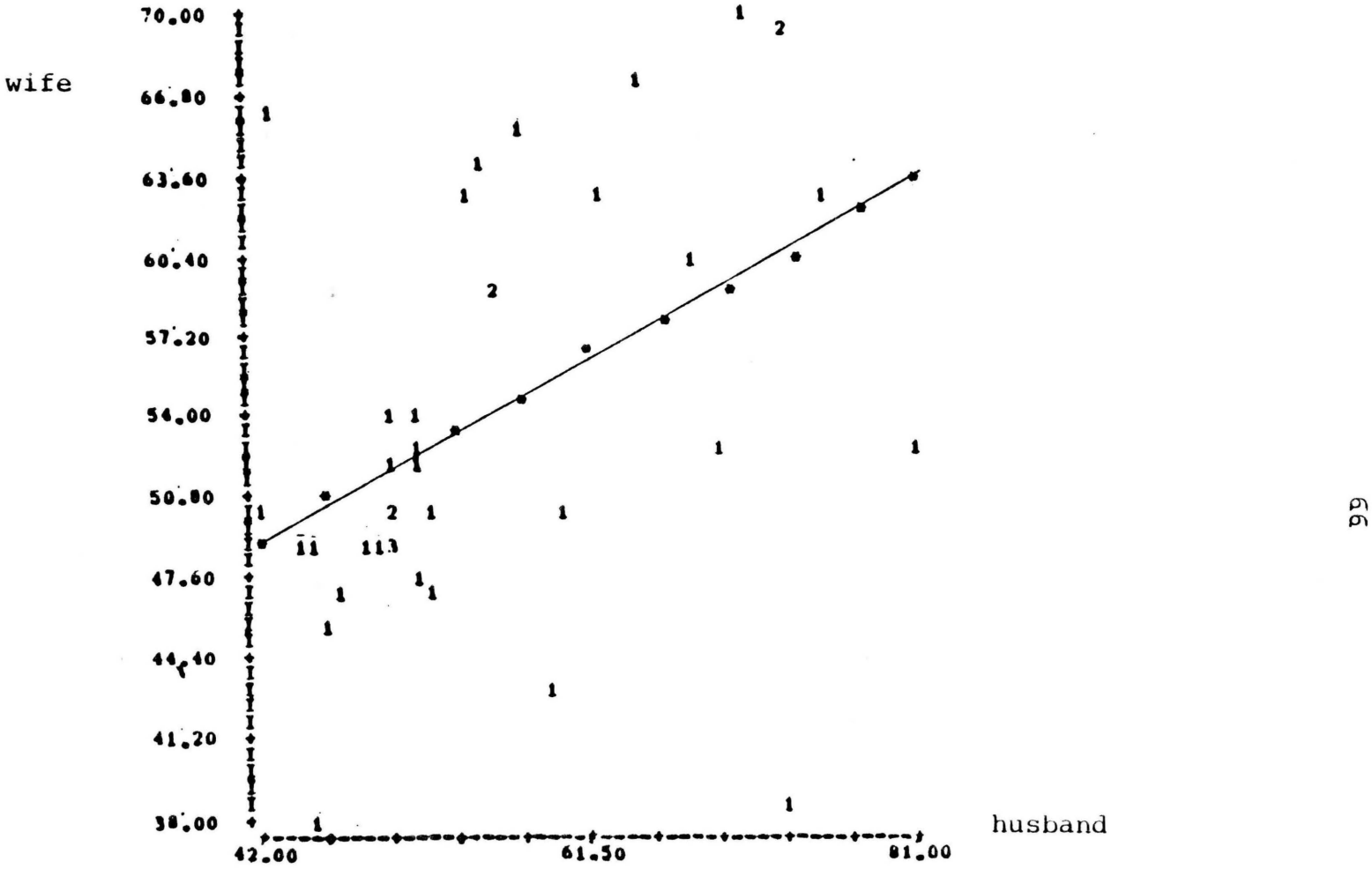

Figure 3. Correlation of health beliefs concerning cancer of husband and wife. (n = 39).
Note. "$\bar{x}$"indicates regression line. Numbers are observed points.

2. A relationship exists between those spouses who have a homogeneous health locus of control in relation to their health beliefs about cancer.

3. A relationship does not exist between those spouses who have a heterogeneous health locus of control orientation in relation to their health beliefs about cancer. The level of significance for Minor Hypothesis 2 was $\underline{p} = .055$. Although no statistical significance was achieved at the strict .05 level, there was sufficient strength at the .055 level to be noteworthy.

CHAPTER 5

SUMMARY OF THE STUDY

This was a descriptive correlational research study. The primary purpose of this type of research was to make inferences about relationships among variables without direct intervention (Kerlinger, 1973). The variable studied in this research study was: health locus of control orientation and cancer health beliefs. The problem of the study was to determine the relationship between spouses and their health locus of control orientation and their cancer health beliefs.

Summary

The theoretical framework of this study was based on the work and research of Rotter et al. (1972). The major concept of Rotter's theory is limited to the scope of those patterns of behaviors which are learned (as opposed to unlearned, biological determinants of behavior). Focusing on patterns of behavior which are considered to have been learned means, concerning ourselves, revealed values, attitudes, expectations rather than instincts, and other innate influences on behavior.

The concept of expectancy is based on the theory that:

> The occurrence of a behavior of a person is determined not only by the nature or importance of goals or reinforcement but also by the person's anticipation or expectancy that these goals will occur. Such expectations are determined by previous experience and can be quantified. (Rotter et al., 1972, p. 11)

The consideration of expectancies is central and paramount to social learning theory and considered to be the prime determinant of behavior.

In addition to the social learning theory's major postulates, there are four key concepts which are utilized in the prediction of behavior. One purpose of any theory is prediction, and through the concepts of expectancy, a predictive power can be achieved by the social learning theory (Rotter et al., 1972).

The basic concepts are behavior potential, expectancy, reinforcement value, and the psychological situation (Rotter et al., 1972). The following explanations of the use of these terms are given by Rotter et al. (1972):

> Behavior potential may be defined as the potentiality of any behavior's occurring in any given situation or situations as calculated in relation to any single reinforcement or set of reinforcements. (p. 12)

> Expectancy may be defined as the probability held by the individual that a particular reinforcement will occur as a function of a specific behavior on his part in a specific situation or situations. Expectancy is systematically independent of the value or importance of the reinforcement. (p. 12)
>
> The reinforcement value of any one of a group of potentially external reinforcements may be ideally defined as the degree of the person's preference for that reinforcement to occur if the possibilities of occurrence of all alternatives were equal. (p. 13)

Rotter et al. (1972) did not define explicitly the psychological situation; however, the authors discussed it in terms of external and internal environmental stimuli to which an individual reacts selectively. The expectancy for any specific situation is dependent upon prior experience in that situation as well as past experience in similar situations.

The following hypotheses were examined in this study:

Major Hypothesis: There is no significant relationship between cancer health beliefs of husbands and wives and the health locus of control orientation of the pairs.

Minor Hypothesis 1: There is no significant relationship between those spouses who have homogeneous health locus of control orientation in relation to their health beliefs about cancer.

Minor Hypothesis 2: There is no significant relationship between those spouses who have heterogeneous health locus of control orientation in relation to their health beliefs about cancer.

The setting of this research study was a large metropolitan city in a Southwestern state in the United States. Subjects from many ethnic backgrounds were interviewed primarily in nutritional centers, although a small number of absent spouses from the nutritional centers was interviewed at home to complete the couple responding.

The sample was derived of 40 couples, in which at least one partner was attending a nutritional center in the metropolitan city. In the couples, both the husband and wife were over 55 years of age and had been married at least 5 years.

Two tools were utilized in this study: (a) Wallston's Health Locus of control and (b) Gray's Health Belief Index. The Wallston's Health Locus of Control (HLC) Scale (Wallston et al., 1976) is an area specific measure of expectancies regarding locus of control developed for prediction of either internal or external health related behaviors. The Gray's Health Belief Index was developed by the researcher and based on Becker's Health Belief

Model, using Becker's (1974) four variables of (a) barriers, (b) benefits, (c) severity, and (d) susceptibility in 16 scrambled items. Gray's Health Belief Index indicates either negative or low health beliefs or positive or high health beliefs.

The findings of the study are as follows:

1. A relationship exists between the cancer health beliefs of husbands and wives regardless of the health locus of control orientation of the pairs.

2. A relationship exists between those spouses who have a homogeneous health locus of control in relation to their health beliefs about cancer.

3. A relationship does not exist between those spouses who have a heterogeneous health locus of control orientation in relation to their health beliefs about cancer.

Discussion of Findings

The findings of this study support Rotter et al.'s (1972) theory that the "powerful other" dimension indicated relationships between spouses with homogeneous health locus of control orientation. Those spouses who showed interrelationships in cancer health beliefs also indicated similar relationships in their locus of control

orientation. Although with heterogeneous health locus of control orientations in married partners there was also dissimilar results in regards to cancer health beliefs.

Conclusions and Implications

The following are conclusions and implications of this study:

1. This study supported Suchman's (1965) findings for links between demographic factors as well as social structures to predict subsequent behavior so that education, procedures, and treatments may be formulated accordingly.

2. Findings of this study suggested that a relationship existed for dyads between the cancer health beliefs of husband and wife, regardless of the health locus of control orientation of the pairs. This supports Becker's (1974) position that beliefs are a key concept to relate any two or more psychological elements or objects of an individual in regards to health care planning and delivery.

Implications for Nursing

1. The patient educator by determining the impact of the environment on the individual's conception of

cancer health care, particularly the influence of a spouse's beliefs as a powerful other, should be able to develop programs which can be adjusted with regard to these variables. Education, procedures, and treatments which have been tailored to match the partner's locus of control might well be more successful than treatments which have not.

2. Nurses, both in practice and education, should know that demographic factors may be useful in the planning of health care.

Recommendations for Further Study

The recommendations for further study are as follows:

1. The study should be replicated with a larger sample.

2. Further research is suggested to clarify the relations of attitudes, motives, and beliefs to subsequent behavior.

3. Each partner should be interviewed individually to avoid incidences of verbal interrelationships while completing the instrument.

4. The Gray's Health Belief Index needs further reliability testing in regard to negative or low health beliefs and positive or high health beliefs.

5. Further research to make the Health Belief Model more sophisticated and useful for health prediction.

APPENDIX A

TEXAS WOMAN'S UNIVERSITY
Box 23717, TWU Station
Denton, Texas 76204

1810 Inwood Road
Dallas Inwood Campus

HUMAN SUBJECTS REVIEW COMMITTEE

Name of Investigator: Linda G. Gray Center: Dallas

Address: 9144 Vinewood 8102 Windy Ferrace Cir Date: 4/18/80

Dallas, Texas 75228

31

Dear Ms. Gray:

Your study entitled Health Locus of Control and Cancer Health Beliefs of Spouses

has been reviewed by a committee of the Human Subjects Review Committee and it appears to meet our requirements in regard to protection of the individual's rights.

Please be reminded that both the University and the Department of Health, Education, and Welfare regulations typically require that signatures indicating informed consent be obtained from all human subjects in your studies. These are to be filed with the Human Subjects Review Committee. Any exception to this requirement is noted below. Furthermore, according to DHEW regulations, another review by the Committee is required if your project changes.

Any special provisions pertaining to your study are noted below:

____ Add to informed consent form: No medical service or compensation is provided to subjects by the University as a result of injury from participation in research.

____ Add to informed consent form: I UNDERSTAND THAT THE RETURN OF MY QUESTIONNAIRE CONSTITUTES MY INFORMED CONSENT TO ACT AS A SUBJECT IN THIS RESEARCH.

_____ The filing of signatures of subjects with the Human Subjects Review Committee is not required.

__X__ Other: 1. Collect and store signed informed consent forms separately from the questionnaire as additional protection for anonymity.

_____ No special provisions apply.

__X__ Other: 2. Indicate that no names will be used and that subjects will not be identified.

Sincerely,

Estelle D. Kerr

Chairman, Human Subjects Review Committee

at Dallas

PK/smu/3/7/80

APPENDIX B

TEXAS WOMAN'S UNIVERSITY

(Form A--Written presentation to subjects)

Consent to Act as a Subject for Research and Investigation

(The following information is to be read to/by the subjects)

1. I hereby authorize Linda Gray
(Name of person(s) who will perform procedure(s) or investigation(s)
to perform the following procedure(s) or investigation(s). (Describe in detail):

   (1) Scoring on two questionnaires
   (2) Correlation of my scores on these questionnaires

2. The procedure of investigation listed in Paragraph 1 has been explained to me by Linda Gray
(name)

3. I understand that the procedures of investigations described in Paragraph 1 involve the possible risks or discomforts. (Describe in detail):
   1. A period of time will be taken to read and complete the scale and this may be a personal inconvenience.
   2. Completing the scale may be tiring.
   3. Expressing personal attitudes may be embarrassing.
   4. Although measures have been taken to control data, an improper release of data may occur.

4. I understand that the procedures and investigations described in Paragraph 1 have the following potential benefits to myself and/or others:
   (1) Completion of this scale may actually be an enjoyable experience.
   (2) Knowledge of the relationship between beliefs of spouses about cancer may benefit the health personnel and future patients.
   (3) The direction and quality of nursing care may be beneficially affected by this study.

(Form A--Written presentation to subjects) (continued)

5. An offer to answer all of the questions regarding the study has been made. If alternative procedures are more advantageous to me, they have been explained. I understand that I may terminate my participation in the study at any time.

_____ _____

Subject's Signature Date

APPENDIX C

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING
DENTON, TEXAS 76204

DALLAS INWOOD CENTER
1810 INWOOD ROAD
DALLAS, TEXAS 75235

DALLAS PRESBYTERIAN CENTER
8194 WALNUT HILL LANE
DALLAS, TEXAS 75231

HOUSTON CENTER
1130 M.D. ANDERSON BLVD.
HOUSTON, TEXAS 77025

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE Dallas County Nutrition Program

GRANTS TO Linda Gray
a student enrolled in a program of nursing leading to a Master's Degree at Texas Woman's University, the privilege of its facilities in order to study the following problem.

Study will be with forty couples to determine the relationship between spouses' health locus of control and their cancer health beliefs. It is only necessary for one partner to attend nutritional center and study can be completed in approximately ten to fifteen minutes. Researcher would have to go to remaining partner's residence if not available at center.

The conditions mutually agreed upon are as follows:

1. The agency (may) ~~(may not)~~ be identified in the final report.
2. The names of consultative or administrative personnel in the agency ~~(may)~~ (may not) be identified in the final report.
3. The agency (wants) ~~(does not want)~~ a ~~conference~~ written report with the student when the report is completed.
4. The agency is (willing) ~~(unwilling)~~ to allow the completed report to be circulated through interlibrary loan.
5. Other _____

Date: 5-22-80

Signature of Agency Personnel

Linda G. Gray
Signature of Student

Helen A. Bush Ph.D., R.N.
Signature of Faculty Advisor

* Fill out and sign three copies to be distributed as follows: Original - Student; First copy - agency; Second copy - TWU College of Nursing.

GP:GEN 13
07026074 cd

APPENDIX D

TEST SECTION I

WALLSTON'S HEALTH LOCUS OF CONTROL SCALE

This is a questionnaire to determine the way in which different people view certain important health-related issues. Each item is a belief statement with which you may agree or disagree. Beside each statement is a scale which ranges from (1) strongly disagree to (6) strongly agree. For each item you are to circle the number that represents the extent to which you disagree or agree with the statement. The more strongly you agree with a statement, then the higher will be the number you circle. The more strongly you disagree with a statement, the lower will be the number you circle. Please circle only one number. This is a measure of your personal beliefs; obviously there are no right or wrong answers.

Please answer these items carefully but do not spend too much time on any one item. Be sure to answer every item. Also, try to respond to each item independently when making your choice; do not be influenced by your previous choices. It is important that you respond according to your actual beliefs and not according to how you feel you should believe.

Please answer according to the following key:
1--Strongly Disagree
2--Moderately Disagree
3--Slightly Disagree
4--Slightly Agree
5--Moderately Agree
6--Strongly Agree

1.	If I take care of myself, I can avoid illness.	1	2	3	4	5	6	(I)
2.	Whenever I get sick, it is because of something I've done or not done.	1	2	3	4	5	6	(I)
3.	Good health is largely a matter of good fortune.	1	2	3	4	5	6	(E)

Please answer according to the following key:

1--Strongly Disagree
2--Moderately Disagree
3--Slightly Disagree
4--Slightly Agree
5--Moderately Agree
6--Strongly Agree

4.	No matter what I do, if I am going to get sick, I will get sick.	1	2	3	4	5	6	(E)
5.	Most people do not realize the extent to which their illnesses are controlled by accidental happenings.	1	2	3	4	5	6	(E)
6.	I can only do what my doctor tells me to do.	1	2	3	4	5	6	(E)
7.	There are so many strange diseases around, that you can never know how or when you might pick one up.	1	2	3	4	5	6	(E)
8.	When I feel ill, I know it is because I have not been getting the proper exercise or eating right.	1	2	3	4	5	6	(I)
9.	People's ill health results from their own carelessness.	1	2	3	4	5	6	(E)
10.	People who never get sick are just plain lucky.	1	2	3	4	5	6	(I)
11.	I am directly responsible for my health.	1	2	3	4	5	6	(I)

APPENDIX E

Instructions

The following statements seek your beliefs regarding the disease of cancer. Each item is a measure of your personal beliefs; obviously there are no right or wrong answers. The items are a belief statement with which you may agree or disagree. Beside each statement is a scale which ranges from (1) strongly disagree to (6) strongly agree. For each item, please circle the number that represents the extent to which you disagree or agree with this statement. The more strongly you agree with a statement, the higher the number you will circle. The more strongly you disagree with a statement, the lower the number you will circle. Please circle only one number. It is important that you respond according to your actual beliefs and not according to how you feel you should believe.

TEST SECTION II

GRAY'S HEALTH BELIEF INDEX

Please answer according to the following scale:

1--Strongly Disagree
2--Disagree
3--Slightly Disagree
4--Slightly Agree
5--Agree
6--Strongly Agree

1. I am more likely to have cancer if my parents or grandparents had cancer (than if they did not have cancer). (Susceptibility) 1 2 3 4 5 6

2. If I get cancer, treatment will probably cause me extreme pain. (Severity) 1 2 3 4 5 6

3. A diagnosis of cancer would cause me embarrassment with my peers or friends. (Barrier) 1 2 3 4 5 6

4. If I get cancer, it will make me unable to manage for myself independently. (Barrier) 1 2 3 4 5 6

5. I am more likely to get cancer if I smoke than if I didn't smoke. (Susceptibility) 1 2 3 4 5 6

6. Even if I get cancer, I can expect to live comfortably for some time, if my condition is being treated by a doctor. (Benefit) 1 2 3 4 5 6

Please answer according to the following key:

1--Strongly Disagree

2--Disagree

3--Slightly Disagree

4--Slightly Agree

5--Agree

6--Strongly Agree

7. Even if I thought I had cancer, it would cost too much money to see a doctor. (Barrier) 1 2 3 4 5 6

8. I feel checkups and tests can detect cancer before the appearance of symptoms. (Benefit) 1 2 3 4 5 6

9. If I had cancer, I would live longer if treatment were started soon after I noticed something was wrong with me. (Benefit) 1 2 3 4 5 6

10. I am more likely to get cancer if I am older than 60 years than if I were younger. (Susceptibility) 1 2 3 4 5 6

11. A cancer diagnosis would result in emotional tension in my family. (Severity) 1 2 3 4 5 6

12. If I get cancer, it will cause me to become a financial burden to my family. (Severity) 1 2 3 4 5 6

13. If I were coughing up blood, I would be too fearful to seek medical care. (Barrier) 1 2 3 4 5 6

Please answer according to the following key:

1--Strongly Disagree
2--Disagree
3--Slightly Disagree
4--Slightly Agree
5--Agree
6--Strongly Agree

14.	Cancer can be easily prevented.	(Susceptibility) 1 2 3 4 5 6
15.	If I have cancer, I can expect it to cause death.	(Severity) 1 2 3 4 5 6
16.	If I unexplainably lost weight and thought I had cancer, I would go out of my way to see a doctor.	(Benefit) 1 2 3 4 5 6

APPENDIX F

GEORGE PEABODY COLLEGE for TEACHERS

NASHVILLE, TENNESSEE 37203

Thank you for your interest in locus of control and health. Please excuse this form response, but we have so many inquiries requiring similar replies that we have found this to be an efficient means of disseminating information.

We have now developed the Multidimensional Health Locus of Control (MHLC) Scales, which we recommend over our earlier unidimensional HLC scale. We have enclosed a reprint of the article describing the development of this scale (Wallston, Wallston, and DeVellis, 1978), which includes a tabled copy of the scales. You have our permission to utilize the scales in any research. However, we would appreciate your notifying us about the work you are doing.

An additional table of norms for the MHLC scale is also enclosed. We have recently completed a known groups validation where we found, as expected, that Health Fair Participants were higher on the Internal scale and lower on Chance than our normative groups. Additional validation studies are underway.

If you wish to be added to our mailing list, please complete the enclosed questionnaire. We will periodically send additional material related to use of these scales as it becomes available.

Rotter's Social Learning Theory states that the likelihood of behavior's occurrence is a function of the expectancy that the behavior will lead to an outcome and the reward value of the outcome. Thus, in addition to an expectancy measure (the HLC or MHLC Scales), we have been using a health value measure. A copy of this survey, a modification of Rokeach's value survey, is attached. Although we are not totally satisfied with this measure, it is the best we have been able to locate. We do want to stress the importance of including some measure of reinforcement value (unless you can assume uniformly high value).

If you have more specific questions, don't hesitate to contact us. Please remember to send us information on any use you can make of our scales. We look forward to hearing from you.

Sincerely,

Kenneth A. Wallston, Ph.D.
Associate Professor of
Psychology in Nursing
Vanderbilt University
Nashville, Tennessee 37240
(615) 322-3587

Sincerely,

Barbara Strudler Wallston, Ph.D.
Associate Professor of Psychology
George Peabody College for Teachers
Nashville, Tennessee 37203
(615) 327-8141

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