RELATIONSHIP OF PARTICIPATION IN HEALTH PROMOTION BEHAVIORS TO HEALTH-RELATED HARDINESS AND OTHER SELECTED FACTORS IN OLDER ADULTS

A DISSERTATION

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DEDICATION

This dissertation is dedicated to my dear family who remained supportive, understanding, and patient during the course of study. Without their love and support of my goals, this study would not have been possible.

First, I would like to thank my parents who instilled in me the thirst for knowledge. Their love and support were a source of encouragement during the study.

My daughters, Christine and Jamie, have shared their mother with school and books during a major portion of their lives. They have shared my joys and frustrations during the course of study, and I thank both of them for their unconditional love and support. I look forward to spending more time with Christine, my teenager, and Jamie, my youngest.

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RELATIONSHIP OF PARTICIPATION IN HEALTH PROMOTION BEHAVIORS TO HEALTH-RELATED HARDINESS AND OTHER SELECTED FACTORS IN OLDER ADULTS

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The purpose of this study was to examine the relationship of participation in health promotion behaviors to perceived health status, social support, and health-related hardiness. The conceptual framework that guided the study was derived from the Health Promotion Model developed by Pender.

The sample consisted of 100 subjects, aged 65-89 years, who resided in the central region of Texas. The subjects were predominantly Caucasian (97%) with 55% being married and 55% having more than high school graduation.

The research instruments were self-administered questionnaires that consisted of demographic data, the Perceived Health Status Scale (Cantril), the Norbeck Social Support Questionnaire, the Health-Related Hardiness Scale, and the Health Promoting Lifestyle Profile. A semi-structured pilot was carried out with a sub-sample of 10 subjects.

Findings revealed several significant relationships between the independent and dependent variables. Older adults who rated their health status as high reported a greater tendency to participate in health-promoting behaviors. Findings also indicated that as the subjects aged, they participated in health-promoting behaviors with less frequency, possibly related to their reported lower levels of emotional support.

Stepwise multiple regression analysis revealed that health-related hardiness was the single best predictor for health promotion behaviors accounting for 29.9% of the variance. The three independent variables combined to explain 34.9% of the variance in health-promoting lifestyle.

Recommendations for further research studies include replication of the study using a larger population and shortened scales. The relationships beween social support and health-related hardiness may be examined at the experimental level by testing the effectiveness of a community-based health promotion program which would include classes on health-related hardiness and introduce methods of strengthening social support networks.

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

LIST OF TABLES

LIST OF FIGURES

Figure

CHAPTER 1

INTRODUCTION

For the first time in its history, America is becoming an aging society. Twelve percent of the population, more than thirty million Americans, are currently over sixty-five, and this number is increasing by six million persons each decade (Dychtwald & Flower, 1989). By the year 2030, the ratio of the population over the age of 65 will be 17 percent (Facts About Older Americans, 1983). This increase in life expectancy has brought about a heightened awareness of the need for preventive health services and health promotion for the elderly.

As individuals grow older, acute conditions become less frequent and chronic conditions more prevalent. According to Lawrence and McLemore (1986), the likelihood of suffering from a chronic illness or disabling condition increases rapidly with age, with four out of five persons 65 and over having at least one chronic condition.

Older adult's needs for health care are far greater than those of the younger population (Rundall & Evashwick, 1982). Overall health expenditures for the elderly population are expected to increase to $200 billion by the

year 2000. The greater need and demand for health care have implications for the health care system and for society in general. As such, older Americans will present a challenge to public policy and professionals to provide support for them to maintain their health and quality of life in a time of changing social and economic conditions (Federal Council on Aging, 1978).

The focus of the health care system is moving from the treatment of illness, to the prevention of disease and the promotion of health. The focus of health care delivery and nursing is beginning to shift the responsibility for health from the health care system and health care provider to the individual. With this emphasis on individual health responsibility, many personal lifestyle behaviors have been identified as factors which influence the health and the lifespan of the individual. However, these efforts have been focused on younger populations. Factors that contribute to adherence to health promotion activities in the older population have not been examined in depth (Speake, 1987; Speake, Cowart, & Pellet, 1989).

Problem of Study

Various factors may influence or contribute to healthy lifestyles of the elderly and effect the development of

health promotion strategies. The problem for this study is expressed in the following question: What are the relationships between perceived health status, social support, health-related hardiness and health-promotion behaviors in non-institutionalized, community-based, elderly?

Rationale for Study

Health-promotion behaviors are generally recognized as positive lifestyle practices within society. Many investigators have examined the lifestyle practices of the elderly from a health-practices-mortality model. In this approach the consequences of poor health practices are emphasized rather than healthy lifestyle practices.

Kaplan, Seeman, Cohen, Knudsen, and Guralnik (1987) conducted one such study over a 17 year period with 6,928 adult residents of Alameda County. By 1982, 1,219 (29 percent) had died. They reported that increased risk of death was associated with being male, smoking, having little leisure time activity, weight deviations, and not eating breakfast. These risks were reported to be independent of age, race, socioeconomic status, and baseline health status.

Branch and Jette (1984) studied 1,235 elderly men and women, 66 years of age and older, over a 6 year period and found that age, income, and health status had significant associations with subsequent mortality among elderly women. However, none of the personal health practices of smoking, drinking, nutrition, sleep, or physical activity were related to subsequent mortality rates among older men and women after adjusting for the effects of age, income, and reported health status.

Perceived health status, independent of objective health status, has also been shown to be a significant predictor of mortality. According to Kaplan and Camacho (1983), older adults may be able to perceive subtle biological and physiological changes more correctly than they are able to objectively assess health status measures. Secondly, these psychosocial perceptions may affect resistance and interaction between endocrine, nervous, and immune systems. Mossey and Shapiro (1982) reported that only age appeared to have a more powerful influence on mortality than self-rated health.

According to the United States Department of Health and Human Services (1987), 21 percent of the population is 55 years of age or older, and 80 percent of these

individuals will suffer from at least one chronic health problem. The risk of developing chronic health problems and disability have been linked to unhealthy lifestyles or health behaviors (Berstein, 1981). Research supports the premise that many of the chronic conditions experienced by the elderly may be prevented and alleviated if an older person adopts a healthy lifestyle (Sandler, 1989; Shephard, 1990).

Social support has been linked to positive health practices by Langlie (1977), who reported that indirect health risk behaviors such as exercise, nutrition, seat belt use, medical and dental care, and other screening examinations were influenced by social environment and individual characteristics. Based on the data from the study of 97 individuals 55 years and older regarding the relationship between social support and self-care practices, Hubbard, Muhlenkamp, and Brown (1984) reported that perceived levels of social support had strong positive association with participation in positive health practices. Likewise, Speake, Cowart, and Pellet (1989), in their study of 297 elderly volunteers, reported that positive perceptions of health were positively associated with health responsibility behaviors.

Health-promotion practices of the elderly have failed to emphasize the individual's acceptance of responsibility for maintaining a healthy lifestyle. According to Kaplan, et.al. (1987), adoption of a healthy lifestyle can slow the physical decline from a chronic health problem and improve general physical and mental well-being of the elderly person.

In the late 1970's, Suzanne Kobasa identified the personality characteristic of hardiness and viewed it as "an inherent health-promoting factor in a stress-laden human environment" (Bigbee, 1985, p. 55). The reported investigations of hardiness were primarily related to its buffering effect on stressful life events and illness (Kobasa, 1979; Kobasa 1982; Kobasa et al., 1981; Kobasa & Puccetti, 1983; Lee, 1983; Pollock, 1986).

Kobasa (1979) hypothesized that: (a) persons under stress, who have a greater sense of control over what occurs in their lives will remain healthier than those who feel powerless; (b) persons under stress, who feel commited to various areas of their lives will remain healthier than those who feel alienated; and (c) persons under stress, who view change as a challenge will remain healthier than those who view it as a threat. Kobasa

(1979) tested her three personality hypotheses in a study of 837 public utility executives. The results of the study suggested that personality may have something to do with staying healthy.

In order to further study the concept of hardiness with real and/or potential health problems, Pollock (1989) proposed the concept of health-related hardiness. Pollock (1989) reported significant correlations between the Health-Related Hardiness Scale, an empirical measure of health-related hardiness, and perceived health status, engagement in health promotion activities, and use of social resources with a sample of 50 "healthy" adults.

The health-related hardiness characteristics of control, commitment, and challenge were studied with a sample of 110 non-institutionalized diabetic patients (Pollock, 1989). Findings indicated that those subjects who believed they could influence events related to their health, who were commited to appropriate health-related activities, and who were motivated to promote their own health were able to develop coping strategies with their chronic illness.

The incidence of chronic health problems increases with aging. In order to enhance the health status of the elderly, it is important to understand factors that may

contribute to the elderly's decision to implement lifestyle practices. Future research must emphasize individual acceptance of responsibility for maintaining a healthy lifestyle.

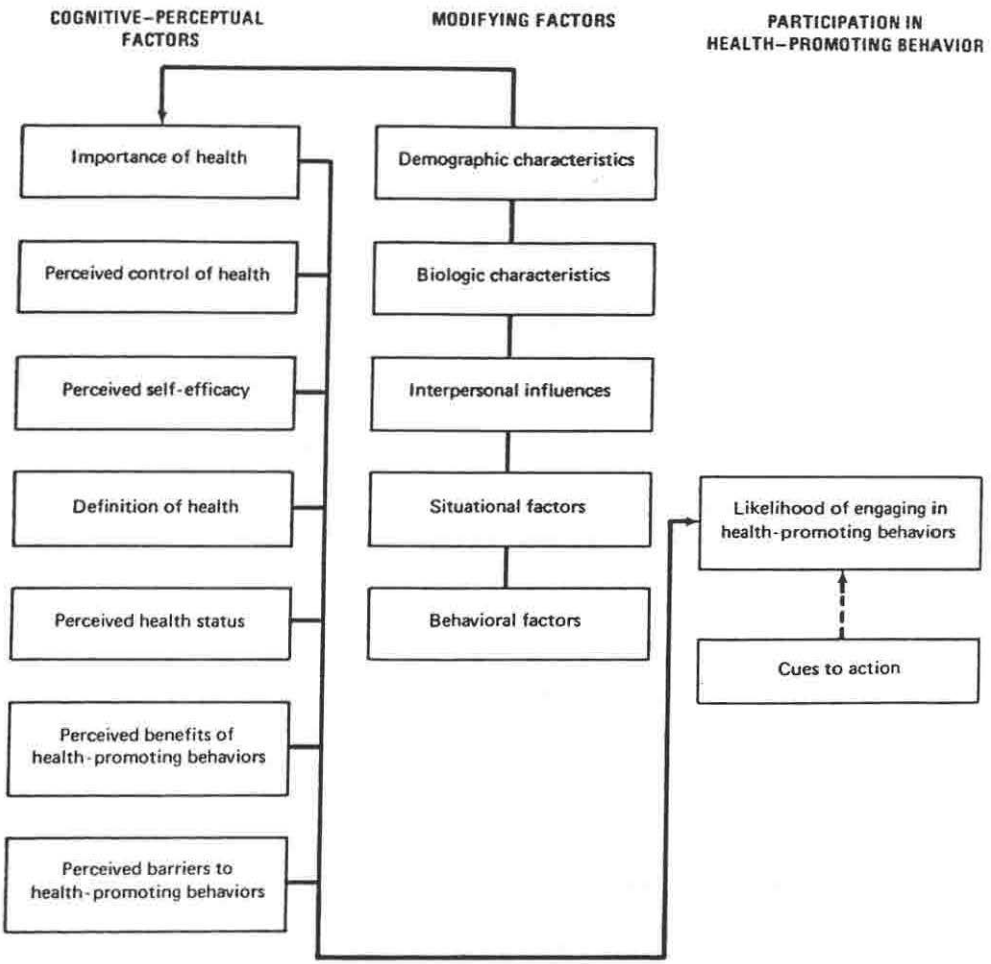
The aim of this study was to add to the body of knowledge on health promotion as it relates to the elderly and to examine the relationship between factors that influence lifestyle practices. In this study the investigator also examined health promotion behaviors in relation to health-related hardiness, social support, and perceived health status.

Conceptual Framework

The Health Promotion Model (see Figure 1) described by Pender (1987) will be the basis for this investigation. The model is derived from social learning theory and based on a synthesis of research findings from studies of health promotion and wellness behavior. The Health Promotion Model may be viewed as a theoretical model in that, it is consistent with current knowledge generated through research, but flexible and open to change as new knowledge is generated.

The Health Promotion Model (Pender, 1987) is structurally organized like the Health Belief Model

Figure 1. Health promotion model



Note. From Health Promotion in Nursing Practice (p. 58) by N. J. Pender, 1987. East Norwalk, CT: Appleton & Lange. Copyright 1987 by Appleton & Lange. Reprinted by permission. (Appendix E)

(Becker, 1974). The Health Belief Model was originally developed to explain preventive health behaviors. Investigations were focused on describing and explaining the various factors that led to participation and adherence to preventive health behaviors. According to Rosenstock (1974), investigators examined why some individuals chose to participate in early disease prevention programs and others did not. With further research, the model was expanded to include more variables related to illness behaviors. According to Pender (1987), the Health Belief Model identified specific determinants of preventive health behavior which focused on the avoidance of illness or disease. The model had been used to predict and explain preventive health behaviors in a variety of situations, but according to Pender (1987) was inadequate for explaining or predicting health promotion behaviors. Therefore, she modified the model to include variables that influence health promotion behavior.

As revised, the Health Promotion Model (Pender, 1987) serves to: (a) introduce order among concepts related to the occurrence of health-promoting behavior, (b) provide the framework for the generation of hypotheses for empirical testing, and (c) integrate research findings into an organized framework. According to Pender (1987)

modifications are made to the model as new empirical evidence becomes available.

The Health Promotion Model (Pender, 1987) focuses on actions that move the individual to greater health, rather than reacting to threats to health imposed by the environment. Health promotion behaviors seek to maintain and enhance the well-being, fulfillment, and self-actualization of individuals or groups. The determinants of health-promoting behavior are grouped into individual perceptions, modifying factors, and variables that affect the likelihood of taking actions (Pender, 1987). These determinants are then categorized as a component of either the decision-making phase or the action phase.

The decision-making phase is composed of cognitive-perceptual factors and modifying factors, and precedes the likelihood of taking preventive action. Cognitive-perceptual factors are personal factors that serve as the primary motivational mechanisms to promote or maintain health-promoting behaviors. These factors are: importance of health, perceived control of health, perceived self-efficacy, definition of health, perceived health status, perceived benefits of health-promoting

behaviors, and perceived barriers to health-promoting behaviors.

Within the Health Promotion Model, Pender (1987) has proposed that the significance or importance that an individual places on enhancing health status (valuing health) is likely to affect the occurrence and intensity with which health-promoting behaviors occur. The impact of valuing health in motivating and directing health-promoting behavior received support from a study of 88 college students (Wallston, Maides, & Wallston, 1976). Students who placed a high value on health, chose more health-related pamphlets than did students with a low value of health.

Perceived control of health is an individual perception that one is internally or externally controlled in making health-promoting behavior choices. An individual who is internally controlled and has a strong desire for control should exhibit overt health-promoting behaviors (Pender, 1987).

Within the Health Promotion Model (Pender, 1987), perceived self-efficacy is defined as "individuals' convictions that they can successfully execute the required behavior necessary to produce a desired outcome" (p. 62). Self-efficacy was reported to be an important

factor in the maintenance of smoking cessation and weight loss (DiClemente, 1981; Condiotte & Lichtenstein, 1981; Chambliss & Murray, 1979). Pender (1987) proposes that individuals with a strong sense of efficacy will exert greater effort to master problems or challenges.

According to Pender (1987), the way an individual defines health may influence the extent to which they engage in health-promoting behaviors. Therefore, if health is viewed as a positive construct, individuals may be more predisposed toward maintaining health.

Individuals who perceive their health status as good tend to report more frequent, intense involvement with health-promoting behaviors then individuals who perceive their health status as fair or poor (Pender, 1987). Pender and Pender (1986), in studying 377 adults, reported that perceived health status was a significant determinant of "behavioral intentions to attain or maintain recommended weight" (p.17).

Perceived benefits of health-promoting behaviors and perceived barriers to health-promoting behavior are two parallel cognitive-perceptual factors in the Health Promotion Model (Pender, 1987). Individuals who perceive benefits from participation in health-promoting behaviors tend to continue such practices. The continued

participation in health-promoting behaviors appears to strengthen and reinforce beliefs about the benefits. Perceived barriers such as unavailability, inconvenience, or lack of time, may influence an individual's participation in health-promoting behaviors (Pender, 1987). Dishman, Sallis, and Orenstein (1985) reported that available time and easy access to facilities were important factors that influenced continued participation in exercise programs.

Within the Health Promotion Model (Pender, 1987), modifying factors are those factors that may indirectly influence an individual's decision to engage in health-promoting behaviors through their impact on individual perceptions. These factors are: (a) demographic characteristics, (b) biological characteristics, (c) interpersonal influences, (d) situational factors, and (e) behavioral factors.

Demographic factors such as sex, age, race, ethnicity, education, and income may influence cognitive-perceptual mechanisms. In this manner, demographic factors may indirectly affect patterns of health-promoting behaviors (Pender, 1987).

Biological characteristics have not been explored as extensively as other modifying factors. Pender and Pender

(1986) did report that weight appeared to be a significant predictor of intention to engage in exercise regularly.

As proposed within the model, interpersonal factors such as expectations of significant others, family patterns of health care, and interactions with health professionals may influence health-promoting behaviors (Pender, 1987). In a study of 377 adults, Pender and Pender (1986) reported that positive personal attitudes and family expectations significantly influenced participation in health-promoting behaviors.

Situational factors, as viewed within the Model (Pender, 1987), arise from the environment and may positively or negatively influence participation in health-promoting behaviors. The availability of a health-promoting program, ease in accessing the options available, or readily finding available specially prepared diets may promote or prevent participation in health-promoting behaviors.

Pender (1987) proposed that previously acquired knowledge, experience, and skills can influence an individual's health behavior pattern. Having had previous experience with exercise programs or diet options can facilitate implementation of health-promoting behaviors.

These factors are grouped as behavioral factors in the Health Promotion Model (Pender,1987).

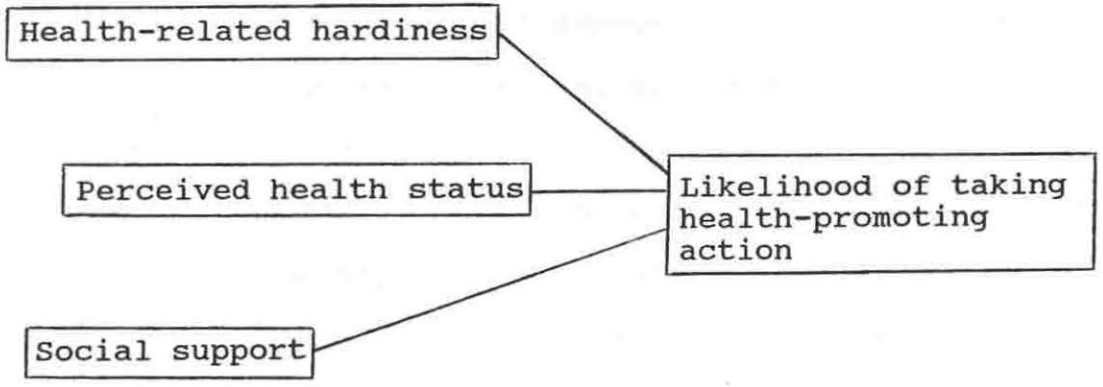
The decision to participate in health-promoting behaviors is influenced by cues that are either of internal origin or originate from the environment. The individual who feels good as a result of physical activity and continues with the exercise program is responding to an internal cue; whereas, information received from others regarding the benefits of an exercise program can serve as external cues for health promotion.

The Health Promotion Model (Pender, 1987) was chosen as the framework to examine the relationship among specific determinants of health promotion behavior with older adults. Based on a review of health-promoting behaviors in older adults, perceived health status, social support, and health-related hardiness (commitment, control, and challenge) were identified as variables that are often related to health promotion behaviors (Gilbert, 1986). These variables are depicted in Figure 2.

According to Pender's (1987) Model, perceived health status is a cognitive-perceptual factor viewed as one of the primary motivational mechanisms for acquiring and maintaining health-promoting behaviors. Perceived health

status is a factor which has been proposed to exert a direct influence on the likelihood of engaging in health-promoting actions. Therefore, Pender (1987) proposes that individuals' positive perceptions of their personal health are related to the likelihood of engaging in health promotive activities.

Figure 2. Model for examination of the variables of interest.



Interpersonal factors, such as social support, are proposed within the Health Promotion Model (Pender, 1987) as modifying influences on health-promoting behaviors. Social support may influence individual perceptions and indirectly effect the likelihood of taking health-promoting action.

The relationship of health-related hardiness to health-promoting behavior has not been identified in the Health Promotion Model (Pender, 1987). However, Pollock (1989) reported positive correlations between health-related hardiness and health promotion activities. In a study of adults who described themselves as healthy ($n = 244$), significant relationships were reported between the presence of hardiness and higher levels of perceived health status ($\underline{r} = .28$, $\underline{p} \leq .05$), the presence of hardiness and engagement in health promotion activities ($\underline{r} = .23$, $\underline{p} \leq .05$), and the presence of hardiness and the use of social resources (social support).

The results of this study (Pollock, 1989), provided beginning support for studying health promotion behavior and its relationship to health-related hardiness.

The concept of hardiness was identified by Kobasa in the 1970's as a personality characteristic composed of commitment, control, and challenge (Lambert & Lambert, 1987). Kobasa (1979) expanded the study of the concept to health and illness and hypothesized that hardiness was the personality structure that enabled some individuals to cope with daily stresses and remain healthier through a greater sense of control over what occurred in their

lives, by committing to various areas of their lives, and by viewing change as a challenge.

Pollock (1989) viewed the hardiness scale as having limited use with certain populations, having psychometric ambiquity, and being too general to be relevant for testing the concepts of control, commitment, and challenge in individuals who had health concerns or problems. Therefore, Pollock (1989) developed the Health-Related Hardiness Scale to better measure the hardiness characteristic in individuals who had an actual or potential health problem. Through testing, the Health-Related Hardiness Scale has been shown to be a valid and reliable instrument in health-related research. According to Pollock (1989), the concept of health-related hardiness must be further researched with various age groups, with well and ill populations, and in relation to other personality dimensions.

According to Pender (1987), the Health Promotion Model provides an organizing schema for variables thought to affect the occurrence of positive health practices. However, there is still a great need to conduct research to support the model and explore other variables that may add to the present model. The American Nurses' Association Cabinet on Research (1985) has also identified

health promotion as a research priority as nursing moves into the twenty-first century.

Health-related hardiness is a personality characteristic that has been examined in relation to chronically ill individuals (Pollock, 1989). It is a complex personal charcteristic that may vary among individuals. The control, commitment, and challenge components of health-related hardiness are individual perceptions that may influence the acquisition and maintenance of health-promoting behaviors. However, only through research will these areas be addressed. In this study, health-related hardiness was examined as a cognitive-perceptual factors in Pender's (1987) model. Further research with this framework provided support for the model and added to the body of nursing research related to health promotion and the elderly.

Assumptions

For the purpose of this study, the following assumptions were made based on the Health Promotion Model (Pender, 1987) which is a modification of the Health Belief Model (Becker, 1974):

1. Health-promotion behaviors are focused on

maintaining and enhancing the well-being, fulfillment, and self-actualization of individuals or groups.

2. Each individual possesses personal factors that promote or maintain health promotion behaviors.

3. Modifying factors effect the predisposition to health-promoting behaviors.

4. Interpersonal and situational variables may influence individual perceptions.

5. Active involvement in health-promoting behavior is influenced by internal cues or cues from the environment.

6. An individual's decision to engage in health-promoting behavior is influenced by individual perceptions and modifying factors.

7. Health-related hardiness is an individual cognitive-perceptual factor that may influence health promotion behaviors.

Research Questions

The following research questions were formulated to guide this research:

1. What is the relationship between participation in health-promoting behaviors and perceived health status in non-institutionalized, community-based elderly?

2. What is the relationship between participation in health-promoting behaviors and social support in non-institutionalized, community-based elderly?

3. What is the relationship between participation in health-promoting behaviors and health-related hardiness in non-institutionalized, community-based elderly?

Definition of Terms

For the purpose of this study, the following definitions were provided:

1. Health Promotion Behavior - activities "directed toward sustaining or increasing the level of well-being, self-actualization, and personal fulfillment of a given individual or group" (Pender, 1987, p. 57) as measured by scores obtained on the Health Promoting Lifestyle Profile (HPLP) (Walker, Sechrist, & Pender, 1987). (Appendix A)

2. Perceived Health Status is self-assessment of an individual's own current health as measured by the individual's specific self-rating score on a Cantril ladder (Cantril, 1965). (Appendix B)

3. Elderly are individuals 65 years of age and over (Eliopoulos, 1979).

4. Social Support is the individual's interaction with others that leads the individual to feel loved and

cared for, esteemed and valued, and a member of a network of a community and mutual obligation (Cobb, 1976) as measured by a specific score on the Norbeck Social Support Questionnaire (Norbeck, 1981). (Appendix C)

5. Health-Related Hardiness is the personality resource of control, commitment, and challenge that enables individuals to adjust and respond to actual or potential health problems (Pender, 1987) as measured by scores obtained on the Health-Related Hardiness Scale (HRHS) (Pollock, 1989). (Appendix D)

6. Non-Institutionalized Elderly are males or females 65 years or older who are living independently in the community, either at home or in a retirement village.

Limitations

The following limitation was recognized in this study:

1. A convenience sample was used which limited the generalizability of the results to the study sample.

Summary

Many lifestyle behaviors have been identified as factors which influence the health and lifespan of the individual. In this chapter, the relationship between perceived health status, social support, health-related

hardiness, and participation in health-promoting behaviors in the elderly was discussed. The justification for studying health-promoting behaviors in the elderly who live in the community was based on the demographic trends of an aging population and the increasing need and demand for positive health outcomes in the elderly.

The Health Promotion Model (Pender, 1987) from which the study evolved provided a framework for examining factors that influence participation in health-promoting activites. Through use of the model, various individual perceptions, strengths, and values were examined in relation to individual health choices. The three research questions were derived from the review of the literature in conjunction with the conceptual framework.

CHAPTER 2

REVIEW OF THE LITERATURE

The literature review focuses on four major areas. The first area addresses health-promoting behavior including the history of health promotion and applied research. The second area addresses literature associated with health-related hardiness. This is a developing concept now being explored in the literature. The remaining areas address literature associated with social support and perceived health status.

Health-Promoting Behaviors

Health promotion or promoting positive health has always been a component of nursing care. Espousing health promotion has its roots in the teachings of Florence Nightingale (1860). Nightingale (Seymer, 1954) stated nursing's basic philosophy as "the same laws of health or of nursing, for they are in reality the same, obtain among the well as among the sick...." (p. 353) Nightingale visualized the nurse as primary care agent in the promotion of wellness and in the prevention of disease (Palmer,1983).

During the 1950's, Leavelle and Clark (1965) conceptualized three levels of prevention of disease. Primary prevention, the first level, takes place before disease or illness occurs. Health promotion, as a component of primary prevention, is considered to be activity aimed at sustaining or increasing the general level of well-being.

There was continued movement toward wellness during the seventies. John Travis, a proponent of the wellness movement, proposed that illness or symptoms resulted from individual choices made at the behavioral, psychologic, and philosophic intrapersonal level. His system of wellness education addressed lifestyle choices that focused on self-responsibility for health care (Brubaker, 1983).

In Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention (U.S. Department of Health, Education, and Welfare, 1979), 13 priority activities were identified to promote health and prevent disease. In 10 years following this report, the achievements in health promotion and disease prevention that occurred were evidence that Americans are acting on the belief that individually and collectively they have an

element of control over their health (Mason & McGinnis, 1990).

As health care moves into the next century, there is a growing social commitment to health. The health care agenda as set forth in Healthy People 2000 (U. S. Department of Health & Human Services, 1990), is a common shared responsibility for improving the health profile of the population. Because health is viewed in a much broader sense - as the ability to function fully and independently in society - prevention will depend heavily on personal choices. This description coincides closely with the O'Donnell (1989) definition of health promotion which is "...helping people change their lifestyle to move toward a state of optimal health" (p. 5). Changes in lifestyle can be facilitated through a combination of efforts to increase awareness, change behavior, and create environments that support good health practices, with supportive environments possibly having the greatest impact on producing lasting changes (O'Donnell, 1989).

Health Promotion in Nursing

Health promotion is not a new concept in nursing. Promoting positive health has always been a component of nursing care. However, the term "health promotion" was not indexed in the nursing literature until 1983. The

definition of health promotion used for the basis of this study was proposed by Pender (1987), and is defined as "activities directed toward increasing the level of well being and actualizing the health potential of individuals, families, communities, and society" (p.4). In support, Brubaker (1983) contends that health promotion is health care directed toward growth and improvement in well being. It is movement toward a positive state of health. Dychtwald (1986) has devoted an entire book related not only to health promotion, but also to health promotion and wellness in the elderly emphasizing the need for further research.

Health Promotion in the Elderly

Research studies concerning health promotion in the elderly are not found in abundance although many of the cross-sectional studies reported can be applied to the elderly population. Prior to the recognition of the concept of health promotion, Palmore (1970) studied the health practices of 250 elderly subjects over a 10 year period by measuring health outcomes. He reported that exercise, maintaining recommended body weight, and not smoking were related to a number of positive health outcomes. Pender and Pender (1980) found that expressed

interest in preventive and promotive care, post high school education, and lowlife stress were the best predictors of intention to use preventive and health promotion services.

Research conducted by Brown, Muhlenkamp, Fox, and Osborn (1983) obtained data from 63 subjects, ages 18 through 90, and examined the relationship between health beliefs, health values, and health promotion activity. Results indicated that married subjects participated in more health promotion activities than single subjects. The researchers also reported a negative correlation between chance locus of control and total health promotion activity. These findings were attributed to the assumption that individuals who believe they have little personal control over events that happen to them would have little reason to engage in health promotion activities. However, Laffrey and Isenberg (1983) did not find this relationship. In a later study, Muhlenkamp, Brown, and Sands (1985) reported internal health locus of control to be a major determinant of adults' reported health promotion activity.

An examination of health practices in young, middle aged, and elderly adults (n = 396) indicated that elderly respondents reported higher frequencies of health-

promoting actions such as nutrition and sleep than did the younger respondents. Prohaska, Leventhal, Leventhal, and Keller (1985) also reported the elderly (n = 112) as perceiving increased vulnerability to disease, and increasing the frequency of health practices that were designed to decrease stress and maintain activity as they aged.

Research data reported by Bausell (1986) compared 1,254 adults' adherence to health-seeking behaviors. The elderly were more likely to follow nutritional guidelines and have regular blood pressure checks; however, they perceived themselves as having less control over their future health than did the younger participants.

More recently, Walker, Volkan, Sechrist, and Pender (1988) compared the health-promoting behaviors of older adults with those of young and middle-aged adults. Six dimensions of life style were measured by the Health-Promoting Lifestyle Profile (HPLP) in 452 adults aged 18 to 88. Older adults had higher scores on the HPLP and in the dimensions of health responsibility, nutrition, and stress management than both young and middle-aged adults. Scores were lowest across all three age groups in the exercise dimension of health-promoting life style.

Other behaviors have been associated with health practices of the elderly. Research findings reported by Yoder, Jones, and Jones (1985) revealed that individuals were more apt to go to the doctor to stay healthy than exercise or eat nutritiously. Two additional findings were that individuals who expressed belief in health promotion behaviors, were more likely to practice them than those who did not express such a belief, and that people living alone were less likely to perform health promotion behaviors than those who lived with others. These findings were based on a convenience sample of 104 emergency room patients with only 6 percent over the age of 56.

Brown and McCreedy (1986) surveyed 386 adults 55 years or older regarding their health behaviors. Findings indicated that women practiced more healthy lifestyle behaviors than men, and that these practices continued into older adulthood.

The initial testing of the concept of health promotion as proposed by Pender (1987) was conducted and reported by Walker, Sechrist, and Pender (1987). The Health Promotion Lifestyle Profile (HPLP), an instrument developed specifically to measure health-promoting behaviors, was tested with 952 subjects. The reported

reliability of the total scale was .92. The alpha coeficients for the six subscales ranged from .70 to .90. The resulting instrument was a 48-item Likert scale which included the six subscales of: (a) self-actualization, (b) health responsibility, (c) exercise, (d) nutrition, (e) interpersonal support, and (f) stress management. The authors concluded that the resulting instrument:

> ...has sufficient validity and reliability for use by researchers who wish to describe the health-promoting component of lifestyle in various populations, and to explore correlates or determinants of health-promoting lifestyle, or to measure changes in health-promoting life-style, or to measure changes in health-promoting life-style as a result of interventions. (Walker, Sechrist, and Pender, 1987, p. 80)

Additional studies were recommended by the authors to further establish construct validity.

In recent years, findings from various studies of factors that influence health-promoting behaviors have shown mixed results. Duffy (1988) studied the influence of health locus of control, self-esteem, and health status on health-promoting lifestyle activities in 262 women between 35 and 65 years of age. The study did not support Pender's (1987) view that demographic variables have an impact on health-promoting behaviors. These findings may have been due to the relative homegeneity of the sample: (a) mostly white, (b) well-educated, and (c) working

full-time in the same setting. Study results did support in part the relationships posited in the Pender (1987) Health Promotion Model (HPM). Internal health locus of control, self-esteem, current health status, and future health status explained 36.3 percent of the variance of the self-actualization, interpersonal support and exercise subscales; whereas age, negative chance locus of control, health worry/concern, and negative prior health status explained 36.5 percent of the health responsibility, nutrition, and stress management subscales.

Fehir (1988) also provided partial support for Pender's HPM. He reported that perceived health status, self-efficacy, motivation, and marriage explained 42.2 percent of the health promotion variance in the cross-sectional sample of 167 white males.

Pender's Health Promotion Model (1987) has been tested in a variety of settings. Weitzel (1989) compared selected components of the HPM to health-promoting behaviors with 179 blue-collar workers, (20 to 60 years of age). Participants who perceived themselves to be in better health, and who held a stronger belief in their own abilities to successfully perform behaviors, engaged in more health-promoting behaviors than did their counterparts. The reported alpha coefficients for this

study were .93 for the HPLP, with subscales ranging from .70 to .92.

In a more recent study of work site health promotion programs, Pender, Walker, Sechrist, and Frank-Stromborg (1990), reported that employees (n = 589) who reported more health-promoting behaviors perceived their health as being affected by significant others and not by chance or luck. They also reported that these employees evaluated their health positively, perceived themselves as competent in handling life situations, and defined health as high-level wellness. Women who were older and in the maintenance phase of the company fitness program also had healthier lifestyle patterns.

In a study of persons with disabilities, Becker, Stuifbergen, Ingalsbe, and Sands (1989) examined the factors associated with the occurrence of health-promoting behaviors. Subjects with the highest self-reported levels of health-promoting activities tended to be older females who reported more self-efficacy, adaptability, and access to health care. The majority of participants perceived their health status as "good" or "excellent" based on their ability to function in society.

Health-Related Hardiness

The hardiness characteristic was originally developed by Kobasa (1979) as the motivating factor or personality characteristic that enabled individuals to remain healthy even when confronted with stressful life events or a stressful environment. According to Kobasa (1979), the hardy person is able to use judgment and make good decisions (control), to become actively involved with others in different activities of life (commitment), and to perceive change as being beneficial to personal development (challenge).

Research related to the direct and indirect effects of hardiness on stress were significant. However, the relevance to the nursing profession was limited due to theoretical concerns about the relationship between hardiness and health, and lack of empirical support for the effect of hardiness on adaptation to actual or potential problems (Pollock, 1989). Therefore, drawing upon concepts from existential psychology, coping and adaptation, and developmental tasks of adulthood, Pollock (1986) developed the concept of health-related hardiness to be more specific to health-related concepts theoretically and operationally. The major differences between Kobasa's hardiness construct and health-related

hardiness construct are health-specific definitions for the three dimensions of control, commitment, and challenge, and the measurement of the presence, rather than the absence, of these factors to determine hardiness (Pollock & Duffy, 1990).

Hardiness has been closely aligned with adaptation to health problems as well as perceived as an intangible quality that enables individuals to remain healthy. Lee (1983) defined hardiness as the intangible personality characteristic that enables the client to enter the health care system with endurance, strength, boldness, and power to control.

Magnani (1986) attempted to identify variables that contribute to successful aging or quality of life. It was hypothesized that older adults who had higher levels of hardiness and self-perceived health would have higher levels of activity. The 115 subjects ranged in age from 60 to 90. The correlations were moderately significant with only 10 percent of the variance explained by the variables.

The focus of Daniel's (1987) study was the relationship between health behavior and hardiness in a convenience sample of 140 long service employees of a large industrial site. Findings indicated that as

education increased so did positive health practices as well as hardiness tendencies. There was a significant relationship between hardiness and attitudes toward self-aging, indicating that the hardier one is, the more positive the aging attitudes.

Pollock (1986) tested the measurement of the concept of health-related hardiness in a study of 60 chronically ill adults divided into three equal-sized groups of adults diagnosed with diabetes mellitus, hypertension, and rheumatoid arthritis. The presence of the hardiness characteristic was significantly correlated with adaptation for the diabetic group but not the others. This study provided initial support for the direct and indirect effects of hardiness as well as supported the Health-Related Hardiness Scale HRHS) as a reliable and valid instrument (Pollock, 1989).

A more recent study of 110 insulin-dependent diabetics indicated that the presence of hardiness was associated with appraisal of diabetes as either possessing a potentially harmful or beneficial outcome (Pollock, 1989). Subjects who believed that they could influence events related to their health, who were commited to appropriate health-related activities, and who were motivated to promote their own health were able to use

appropriate coping strategies to adapt to their chronic illness. This study provided support for indirect positive effects of hardiness on physiological adaptation and further support for the reliability and validity of the HRHS.

In a study of 122 women with rheumatoid arthritis, V. Lambert, Lambert, Klippie, and Mewshaw (1990) examined the relationship between hardiness, social support, severity of illness, and psychological well-being. They found that women who had higher numbers in their social support system and were satisfied with this system were more likely to be characterized as hardy. Additionally, satisfaction with social supports, hardiness, and severity of illness were significant predictors of psychological well-being.

Pollock (1989) pilot-tested the Health-Related Hardiness Scale and Kobasa's (1979) Hardiness scale with a sample (n = 50) of healthy adults. A moderate correlation of .54 was obtained which provided support that both scales were measuring hardiness, but were also sufficiently different from each other. The HRHS score was significantly correlated with perceived health status, engagement in health promotion activities, and use of social resources. Additionally, the HRHS was used in a

study of adults with insulin-dependent diabetes mellitus. The presence of the hardiness characteristic was related to one's physiologic adaptation, how one perceives chronic illness, and what one does about the situation.

Social Support Related To Health Behaviors

Social support emerged during the eighties as a major topic in investigations of psychosocial variables influencing health-related outcomes. Social support is defined as "information leading the subject to believe that he is cared for and loved, esteemed, and a member of a network of mutual obligation" (Cobb, 1976, p.300).

Interest in the role of social support in health maintenance and disease etiology has increased (e.g., Caplan, 1974; Cobb, 1976; Kaplan, Cassel, & Gore, 1977). Several studies indicate that people with spouses, friends, and family members who provide psychological and material resources are in better health than those with fewer social contacts (Broadhead, Kaplan, James, Wagner, Schoenback, Grimson, Heyden, Tibblin, and Gehlbach, 1983; Mitchell, Billings, & Moos, 1982). Evidence from these correlational studies suggest that social support is a causal contributor to well-being (House, 1981).

Conceptually, support functions can be distinguished from each other, but are not often independent in a real setting. For example, it is likely that people who have more access to social companionship have more access to instrumental assistance and esteem support (Cohen & Wills, 1985).

Social Support in the Elderly

Shanas (1979) reported data from the 1975 national survey of noninstitutionalized community aged (n = 5755). Results indicated that the immediate family is the major source of social support for the elderly person at times of illness.

Social networks often play a role determining help-seeking behavior. Rundall and Evashwick (1982) surveyed 833 elderly residents regarding their interaction with family and friends and their perceived health status. Data indicated that 40.2 percent perceived their health status as good with 21.5 percent, as excellent. Of the 833 respondents, 11.6 percent reported being engaged with their relative network. Over half (58.6 percent) of the sample visited with friends on a weekly basis. However, it was the relative rather than the friendship network

which was found to be significantly related to the use of health and social services.

Laschinger (1984) studied the relationship of social support to health in elderly people. The study sample had a high level of functional health as well as quality of social support with little variance between the groups. These findings may be attributable to a small sample size (n = 25) and the use of instruments that were not sensitive enough to distinguish differences.

Preston and Grimes (1987) explored the patterns of social support relative to gender and marital status in the elderly. Telephone interviews were conducted with 900 adults, ages 65 to 94. The patterns of social support differed according to gender between married elderly and unmarried elderly. Married males confided in their wives and relied on them significantly more for help than did married females on their husbands. Married females derived socioemotional support from family and friends rather than spouse. For unmarried elderly there were no gender differences in socioeconomic support; however, unmarried females used family helpers, agency, and paid helpers (instrumental social support) more than unmarried males.

Social Support and Health Status

Although there is a lack of agreement about various components of social support, cumulative findings strongly indicate that social support can aid in recovery from surgery, hospitalization, and illness. Social support can protect against psychological distress in adverse conditions, reduce pregnancy complication for women under stress, and mediate some of the stress of maturational processes (Hamburg & Killilea, 1979).

An unpublished, descriptive, correlational master's thesis examined the relationship between the components of functional social support (affective, affirmative, and aid) and perceived wellness in 58 older adults (Schear, 1988). Results showed significant correlations between sense of coherence and the three types of social support. The study also provided support for the use of NSSQ with the elderly.

Social support variables of emotional support and aid were significantly related to the women's attitudes toward mastectomy in a study of 456 women. However, the women's attitudes toward mastectomy accounted for a greater proportion of the variance in their self-esteem than did social support and other demographic variables (Feather & Wainstock, 1989). The Norbeck Social Support

Questionnaire (NSSQ) (Norbeck, 1981) was used to measure social support and network in this study.

McNett (1987) further explored the use of social support among 50 functionally disabled adults in response to their coping effectiveness. In this study, social support was defined as perceived availability, perceived effectiveness, and personal constraints to use of social support. Findings indicated that perceived availability of social support was significantly and positively related to coping effectiveness and problem-focused coping.

The relationship between psychosocial support and changes in health status of physically disabled adults was studied with a sample of 583 adults, ages 45 to 75. Findings indicated that a high level of social contact had a more protective effect on the physical functioning of respondents with arthritis or heart trouble. With this population, reciprocal or confiding relationships did not appear important for adults with preexisting illnesses who were not at significant risk of developing stress-related conditions (Patrick, Morgan, and Charlton, 1986).

Norbeck, Lindsey, and Carrieri (1981) examined the level of social support for 35 women with gynecological cancer over the course of their illness. For the purpose

of this study, social support was defined as follows:

> interpersonal transactions that include one or more of the following: the expression of positive effect of one person toward another; the alteration of endorsement of another person's behaviors, perceptions, or expressed views; and the giving of symbolic or material aid to another" (Norbeck, Lindsey, & Carrieri, 1981, p. 264.)

Both affect and affirmation were significant predictors of lower levels of ambiquity concerning their illness. Women with more affirmative social relationships were able to form clearer ideas regarding their diagnosis and have more positive attitudes toward health care. During the stabilization phase, after treatment, aid becomes a more significant component of social support by reducing helplessness and providing assurance of the stability of the environment. This is consistent with Wallston, Alagna, DeVellis, and DeVillis, (1983) who proposed that social support may reduce helplessness by providing assurance of the stability of the environment. Findings also support the view that the function of social support changes over time and influences different aspects of health care.

Social Support and Health Practices

Several studies have focused on the relationship between social support and health practices. An

unpublished dissertation by Oesterle (1988) indicated that social support was significant in the indirect role of modifying adherence to an organized exercise program for 67 women. The study also provided additional support for Pender's Health Promotion Model.

Pender and Pender (1986) examined the relationships among attitudes, subjective norms, and intentions to engage in health behaviors. The sample (n = 377) consisted of adults between the ages of 18 and 66 years. Findings do suggest that social support expressed verbally or through family or group fitness activities may be more conducive to continued, regular exercise than unsupported individual attempts. Attitudes were useful in explaining intentions to engage in all three health behaviors studied. Three factors, attitudes, subjective norms, and weight, effected intentions to engage in regular exercise. Attitudes, weight, and perceived health status were the principle determinants of intention to eat a diet consistent with weight control.

Muhlenkamp and Sayles (1986) examined the relationship among perceived social support, self-esteem, and positive health practice among 98 adults, ranging in age from 18 to 67, from varied social status levels.

Results indicated that participants with high self-esteem perceived their social support to be very adequate and also maintained more positive health practices than participants with lower levels of self-esteem and social support. Findings through path analysis indicated that social support may indirectly affect lifestyle through its influence on self-esteem.

Hubbard, Muhlenkamp, and Brown (1984) used a two-study approach to investigate the relationship between individual's perceived level of social support and their performance of specific, positive health practices. The first sample of 97 adults, age 55 and older, participated in activities at a senior citizen's center; whereas, the second sample was attendees at a health fair. Findings indicated a significant relationship between social support and health practices for both groups. Only the married, senior citizen's group scored significantly higher on the social support and health practices instruments. This finding may indicate that the marriage relationship may be important to one's sense of having a socially supportive environment, and it may be someone in an individual's larger social network that encourges good health practices.

Findings by Langlie (1977) and Coburn and Pope (1974) support the concept that it is the person's larger social network, exclusive of kin relationships, that most likely influences participation in positive health practices. Marital status did not make a difference in either perceived social support or number of health practices performed in the health fair group which may be attributed to the group's young mean age of 44. However, married women in both groups had significantly higher scores on the social suppport and health practice instruments than did the men. Data on the senior citizen's group indicated that participants with a confidant had higher scores on both the social support and health practice instruments. These findings are consistent with results reported by Dimond (1979) and Jordan and Meckler (1982).

Social Support and Health Promotion Behaviors

Using Pender's Health Promotion Model, Pascucci (1987) investigated health promotion behaviors of 30 randomly selected well elderly subjects. Although interpretation of study results may have been influenced by the small sample size, data reported did indicate a significant relationship between social support (r = .637) and health promotion behaviors.

An unpublished dissertation by McDaniel (1987) found that socioeconomic status and social support were related to health promotion behaviors. Health promotion behaviors accounted for 27.7 percent of the variance in quality of life of the 91 elderly subjects.

Perceived social support ($p = .0001$) and presence of a confidant ($p = .003$) were found to significantly effect the performance of health-promotive self-care behaviors in a sample of 135 subjects, ages 65 to 80 (Alvey, 1988). Similar findings were reported by Brown (1988) using the NSSQ. She reported a positive relationship between social support and self-care practices and between social support and self-care practices and a confidant. Caution should be used in interpreting the results as a small sample ($n = 40$) of elderly subjects were interviewed.

Perceived Health

The way in which the elderly perceive their health status is a very important indicator of the manner in which they relate to their social world. Studies have found that self-ratings of health among elderly adults are valid measures of the individual's objective health status (Ferraro, 1980; Maddox and Douglass, 1973; Friedsam and

Martin, 1963). Findings from a variety of cross-sectional studies indicate that "poor" perceived health has been correlated with reported higher levels of isolation, negative life events, depression, job problems, unhappiness, life dissatisfaction, and unemployment (Fillenbaum, 1979; Garrity, Somes, and Marx, 1978; McCrae, Bartone, and Costa, 1976; Hessler, New, and Kubish, 1971).

Research has indicated that self-assessment of personal health by elderly individuals appears to be based largely upon how they compare themselves with peers of their age and sex, and the expectations others have of their health (Fillenbaum, 1979; Maddox, 1962). Subjective health ratings of the elderly are often determined by the level of physical and mental functioning required in a particular social environment (Myles, 1978; Maddox, 1962).

Palmore and Luikart (1972) examined variables thought to influence life satisfaction in middle age. The study was designed to analyze the social, psychological, and physical determinants of adaptation of 502 adults aged 45 to 69 over a seven year period. Self-rated health accounted for the large majority of the explained variance in life satisfaction.

Ferraro (1980) found that even though adults age 75 and over reported more health-related problems than the

young-old, they tended to be more positive in rating their own health. Tabloski (1989) also reported higher health assessment among the old-old than the young-old subjects. Because of the number of role changes which take place between the ages of 60 and 70, the young elderly subjects may be predisposed to be more concerned or more pessimistic about their health than the older subjects are (Maddox, 1962).

Ferraro (1980) reported findings from a Census Bureau survey of 3,402 aged individuals. Elderly individuals with higher educational attainment are more likely than others to report better health. Men tended to report fewer disabilities and physiological disorders, in comparison to females who rated themselves as having poorer health.

Cockerham, Sharp, and Wilcox, (1983) studied 660 adults across the age span. Respondents comprising the groups aged 41 to 50 and 51 to 60 reported the worse perceived health status. Age was found to be related to perceived health status with older respondents age 60 and older reporting a more positive health status.

A convenience sample of 63 individuals, ages 18 to 90, participated in a study examining the relationship

among health beliefs, health values, and combined health-promotion activities of safety, nutrition, substance use, relaxation, and exercise. Researchers found that 30 percent of the subjects ranked health as their highest value. However, health value was not found to be significantly related to any of the other variables which may have been due to the limited range of health value scores, with 52 percent of the subjects assigning a value of either 10 or 9 to health (Brown, Muhlenkamp, Fox, and Osborn, 1983).

Hanner (1986) conducted a descriptive, correlational survey of 243 older adults. Self-esteem, perceived health status, education, and income were found to be predictive of a health-promotive lifestyle.

Speake (1986) examined the relationships among individual perceptions of health locus of control and health status, selected demographic variables, and health promotion behavior of physical activity in 118 community-based elderly. Data indicated that internally oriented subjects had better perceptions of health whereas subjects who were older, unmarried, less educated, lived alone, or lived in retirement complexes were associated with greater beliefs that their health was vulnerable to chance or luck.

In a similar study, Cunningham (1989) reported a significant relationship between exercise of self-care agency and health-promoting behaviors. The elderly subjects (n = 178) appeared to be motivated to seek health care and be responsible for their own care.

An unpublished dissertation by Davidson (1988) supported a significant correlation between health-promoting behaviors and exercise of self-care agency, perceived health status, and occupation. The Mennonite elderly subjects (n = 270) were a homogenous group that espouse a belief in Christian lifestyle, good diet, and hard work and may have influenced the results.

Oudt (1988) interviewed 59 women aged 85 to 97 years to determine how older adults describe their health status and health behaviors. Findings indicated that positive attitudes affect the perception of health positively despite chronic illness and other physical or social limitations.

Data from an unpublished dissertation (Whitelaw, 1989) indicated that health conditions and functional limitations explained 64 percent of the variance in subjectively rated health among older adults.

Duffy (1989) investigated the extent to which health locus of control, self-esteem, and specific health promotion activities explained 420 employed women's self-reported health status. Women who rated their health status as good had no diagnosed health problems, good incomes, high internal locus of control, low chance locus of control, high self-actualization, high exercise, and low health responsibility health-promotion scores. The reported alpha coefficient for the HPLP was .91.

Speake, Cowart, and Pellet (1989) reported that positive perceptions of present health were associated with higher scores on the nutrition, interpersonal support, and self-actualization lifestyle subscales. The strength of the study was that it focused on multiple lifestyle practices of the elderly convenience sample (n = 297).

Summary

The review of literature examined the background of health promotion from the historical beginnings of nursing to the present use of the concept. Studies related to various factors that influence health practices, health promotion activity and/or health-promoting behaviors in

several different populations were discussed with an emphasis on findings related to the elderly.

The results of the literature review specific to health-related hardiness revealed a beginning investigation of a new concept to nursing and health care. Health-related hardiness has been tested primarily with chronically ill populations, although it has been highly recommended that the use of the construct be expanded to well populations for further testing. There have been no reported studies correlating health promotion or health-promoting behaviors with health-related hardiness.

The review of literature pertaining to social support provided an overview of variables that have been correlated with social support within selected populations. Studies related to health-promoting behaviors and participation in health promotion activities were limited due to the recent interest in health-promoting behaviors.

Literature review of health status and/or perceived health status, revealed that demographic variables were most often correlated with health status in different populations. There were few reported studies correlating perceived health status with social support, health-promoting behaviors, or health-related hardiness.

CHAPTER 3

PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

A nonexperimental, correlational study was conducted to investigate the relationship among health status, social support, health-related hardiness, and health promotion behaviors of non-institutionalized elderly. The dependent variable was health promotion behavior as measured using the Health-Promoting Lifestyle Profile (HPLP) (Walker, Sechrist and Pender (1987). The independent variables were perceived health status, social support, and health-related hardiness. Extraneous variables included age, ethnic group, marital status, sex, income, place of residence, and educational preparation.

Correlational surveys are used when the purpose is to explore relationships as associations among multiple variables. The correlational survey is a research design that relates multiple variables measured at a single time point in a sample from a designated population (Woods & Catanzaro, 1988). The use of the correlational survey makes it possible to study associations between several variables thought to be related to older adults'

participation in health-promoting behaviors. This chapter includes a description of the investigation.

Setting

The setting for this nonexperimental study was Senior Citizen Centers and congregate meeting rooms in retirement village homes located in a large urban/rural region in a southern state. Within this southern region, there were ten Senior Citizen Centers with over 300 active participants. Located within the same region, there were three retirement villages which house over 300 residents, 65 years of age or older. The investigator had access to the meeting rooms in each of the designated settings in order to administer the questionnaires to the chosen sample.

Population and Sample

The population consisted of all individuals 65 years or older who were living independently in their home or retirement village. In order to access these groups of elderly persons, the sample was selected from individuals who attended the Senior Citizen Centers or lived in a retirement village in the large, urban, rural southern region.

The southern region of approximately 70,000 people is a farming, retail/manufacturing region composed of ethnic groups similar to that of the national population. The composition of the 65 years of age and over age group is also similar to that of the national population. There are two major health complexes and a variety of community and social activities for the residents in the region.

The sample consisted of 100 elderly persons who were willing to participate in the study and either lived at home and attended the Senior Citizen Center or lived in a retirement village. The sample of convenience was used as the population being sampled was readily available to the investigator (Polit & Hungler, 1983).

Protection of Human Subjects

The study complied with all of the current rules and regulations of the Human Subjects Review Committee of Texas Woman's University. This research was exempt from full review by the Human Subjects Review Committee of Texas Woman's University because it was a survey study of non-sensitive information from consenting adults. Agency approval was obtained from each of the Senior Citizen's Centers and retirement centers in order to approach

participants and or residents for particpation in the study. (Appendix F) Consent indicating willingness to participate in the study was obtained from each participant with the guarantee that all data obtained from the questionnaires would be confidential and reported as group information. Each participant was given a letter explaining the purpose of the study, potential risks, and potential benefits. (Appendix G) The name, address, and business phone number of the investigator was on the letter along with a statement indicating that the investigator would be available to answer questions or concerns regarding the study. A statement on the top of the questionnaires used for testing stated that completion of the questionnaires indicated willingness to participate in the study.

Confidentiality of data was assured for each of the participants in the study. No names or addresses were written on the instruments or Demographic Data Sheet. Participation in the study was voluntary and without financial remuneration. Elderly persons who chose to participate were told that the research would not directly benefit them, but could be helpful in learning about the factors related to the general health of older men and women. There was no discomfort or risk to participants

other than the possible inconvenience of the time it took to complete the questionaires and the potential loss of confidentiality. The elderly persons were told that they could refuse to participate or withdraw at any time without effecting their status at the Senior Citizen's Center or retirement village.

Instruments

Four instruments were used to measure the variables in the study. A Demographic Data Sheet was used to obtain information on demographic variables and socioeconomic status. (Appendix H) The Health-Promoting Lifestyle Profile (HPLP), developed by Walker, Sechrist and Pender (1987) was used to measure health promotion behavior. Permission to use the HPLP was obtained from Dr. Walker. (Appendix I) Perceived health status was measured using a ten-step Cantril ladder (1965). The Norbeck Social Support Questionnaire (1981) (NSSQ) was used to measure social support. Permission for use of the NSSQ was obtained from Dr. Norbeck. (Appendix J) The Health-Related Hardiness Scale (HRHS) was used to measure the personality characteristics of commitment, change, and challenge. Permission to use the HRHS was obtained from Dr. Pollock. (Appendix K)

Demographic Data Sheet

The Demographic Data Sheet was designed to elicit responses from the participants about their age, sex, ethnicity, marital status, income, and educational preparation. These variables were included based on previous research findings (Gardner & Wheeler, 1987; Pender, 1987). Participants were requested to circle or complete the blank with the most appropriate response. The Demographic Data Sheet yielded nominal, interval, and ratio level data.

Health-Promoting Lifestyle Profile

The Health-Promoting Lifestyle Profile developed by Walker, Sechrist, and Pender (1987) was used to measure health promotion behavior. The HPLP was developed from Pender's (1987) Lifestyle and Health Habits Assessment. The instrument was tested with a convenience sample of literate volunteers recruited from the general adult population in two midwestern states. The sample was recruited from corporate and industrial worksites, adult social service agencies, recreational organizations, and colleges.

To better develop and refine the HPLP, item analysis, factor analysis, and reliability testing were performed.

The rotated solution for the HPLP yielded six factors with factor loads of .350 or higher. The six factors explained 47.1% of the variance. The six factors are: (a) self-actualization, (b) health responsibility, (c) exercise, (d) nutrition, (e) interpersonal support, and (f) stress management.

The HPLP was found to be internally consistent (alpha = .92), and the six subscales yielded alphas varying from .70 to .90. Test-retest reliability for the scale was .93 and ranged from .81 to .90 for the subscales (Walker, Sechrist, & Pender, 1987).

The elderly subjects selected the level of participation in health promoting behaviors from (1) never, (2) sometimes (3) often, and (4) routinely. The total score for the HPLP was obtained by summing the responses to the 48 items. The possible range of scores for the HPLP is 192 to 48. The scores for the six subscales were determined by summing the items for each subscale. The scores for the scales are as follows: (a) self-actualization (13 - 52), (b) health responsibility (10 - 40), (c) exercise (5 - 20), (d) nutrition (6 - 24), (e) interpersonal support (7 - 28), and (f) stress management (7 - 28).

Perceived Health Status

Perceived health status is an integrative concept that reflects a personal assessment and evaluation of an individual's general health. Perceived health status was measured using a ten-step ladder, which is an adaptation of Cantril's (1965) Self-Anchoring Striving Scale. The scale is based on the premise that an individual's expression of concerns, values, and life perceptions can be used to establish top and bottom points on a self-defined measurement continuum.

Palmore and Luikart (1972) used a modification of a Cantril ten-step ladder with 502 adults ranging in age from 45 to 69 years to determine self-rated health in a study on health and social factors related to life satisfaction. The numbers 0 through 9 were assigned to the consecutive steps with zero at the bottom of the ladder representing the most serious illness and nine at the top representing perfect health. The relationship between the ten-step ladder and a physiologic-medical evaluation of health was examined in this study and revealed a significant positive correlation ($r = .43$, $p \leq .001$).

Engle (1984) modified the instrument used by Palmore and Luikart (1972) by adding the words "lack of health" at

the bottom rung of the scale, "average" at midscale, and "perfect health" at the top rung of the scale. These three additional calibrations were included to help participants relate their own self-assessment of health to the instrument's ten-scale divisions. This modification clarified the scale; however, there was no reported reliability coefficient for the modified ladder.

Perceived health status was determined by the individual's self assessment on the modified ten step scale. The step number chosen by the individual was used as the individual's perceived health status.

Norbeck Social Support Questionnaire

Social support was measured by the Norbeck Social Support Questionnaire (1981). The NSSQ is a self-report instrument designed to measure multiple dimensions of support. Total network is determined by the number in the network, the duration of these relationships, and the frequency of contact. The dimensions of functional support (affect, affirmation, and aid) are measured by responses to six questions on a four-point Likert scale. The values are summed to determine the score for each item. The instrument was tested with two groups of subjects. Group one was 75 first-year graduate students

in nursing and group two was 60 senior nursing students. The alpha reliability coefficients are .97 for affect items, .96 for affirmation items, and .89 for aid items. Concurrent validity was obtained through moderately high correlations (range .31 to .56) with the Social Support Questionnaire developed by Cohen and Lazarus (Norbeck, Lindsay, Carrieri, 1981).

Health-Related Hardiness Scale

The Health-Related Hardiness Scale was developed to better measure the hardiness characteristic in individuals who had an actual or potential health problem. Positive indicators measure the presence of control, commitment, and challenge. The HRHS contains 40 items on a 6-point Likert scale (14 to measure control and 13 items each for commitment and challenge). Total scores for the HRHS vary from 40 to 240, with low scores indicating the presence of hardiness. In a study of 110 adult diabetics, the HRHS alpha coefficient was .86. The test-retest reliability was .90 for two weeks and .80 for three months in a sample of 30 diabetic subjects (Pollock, 1989).

Content validity of the HRHS was established by a panel of judges, faculty and doctoral students with expertise in adult health, to evaluate the

representativeness of the control, commitment, and challenge items on the basis of the operational definitions. Agreement among the judges concerning the items that best measured the control, commitment, and challenge dimensions of hardiness was .85 interrater reliability, obtained by interclass correlations of raters (Pollock, 1989).

Concurrent validity was established by administering both the HRHS and the 50-item Hardiness Scale to 50 "healthy" adults. A correlation of .54 was obtained (Pollock, 1989).

Data Collection

The investigator set meeting dates with selected Senior Citizen Center directors and managers of retirement villages to explain the purpose and design of the proposed study. The investigator then met with the older adults at the selected Senior Citizen's Centers and retirement villages. The purpose and scope of the study and procedure for data collection was explained to small groups of potential subjects. The older adults were told that participation in the study was voluntary and that completion of the questionnaires indicated willingness to

participate in the study. Participants were told that it took approximately 30 minutes to complete the questions.

Participants who were willing to complete the packet of questionnaires raised their hands and were given the set of questions to complete. The investigator remained on site to answer any questions or concerns and collected the completed questionnaires from the participants. In the retirement villages, the investigator read the set of questions to some of the participants due to their poor vision.

Data collection followed the guidelines as aforementioned. One month prior to gathering data for the principal study, a pilot study was conducted in one of the Senior Citizen's Centers with 10 participants.

Pilot Study

The purpose of the methodology pilot study was to test the questionnaire packet with a group of elderly participants for administration and procedural steps. Six of the questionnaires were prepared with large print and all caps, while four questionnaires were typed with regular pica type print. The questionnaires were copied in three different colors, yellow, blue, and white.

After explaining the purpose and scope of the study, ten elderly participants at the Senior Citizen's Center voluntered to read and answer the questionnaires. All ten participants viewed each colored questionnaire and read the two different print types. None of the particpants expressed a concern regarding color of paper stating that the white questionnaire was very readable. The questionnaire with regular pica print was clear to all ten participants, but two of the participants stated that all capital letters would possibly increase the readability for some other elderly participants.

Each of the 10 participants completed all items on the questionnaires without question or concern within a range of 15 to 40 minutes. There were no other verbalized concerns regarding clarity or readability brought to the investigator's attention.

The results of the methodology pilot study indicated that approximately 30 minutes were needed to complete the entire questionnaire packet. The majority of the participants responded that the directions and wording were clear. The regular type print was readable on the white questionnaires and was preferred by all of the participants. Two of the participants suggested that all caps be used on the questions. Based on the following

information, the questionnaire packet was typed with regular pica type in all caps where appropriate and reproduced on white paper.

Treatment of Data

Data analysis consisted of both descriptive and inferential statistics. The level of data obtained with the Demographic Data Sheet was nominal, interval, and ratio level. Descriptive statistics, including percentages, frequencies, and measures of central tendency and variance were used to summarize the characteristics of the elderly subjects as well as each of the variables in the study.

In terms of the quantitative aspect of the study, the research questions were tested using the Pearson Product Moment Correlation Coefficient statistic. This statistic is most frequently utilized in correlational procedures to examine the relationship between the criterion variable and predictor variables (Waltz & Bausell, 1981). The Pearson r was used to determine the extent of the linear relationship with the predictor variables of perceived health status, social support, and health-related hardiness and the criterion variable of health promotion behaviors. The use of the Pearson Product Moment Correlation Coefficient was

appropriate since the variables were treated as interval level data.

The research questions were further tested using multiple regression analysis. This statistic was appropriate to determine how much variance in the dependent or criterion variable can be explained or predicted by the independent or predictor variables (Waltz & Bausell, 1981). The multiple regression coefficient, which ranges from 0 to 1, indicates the strength of the relationship between perceived health, social support, and health-related hardiness with the dependent variable, health-promoting behaviors. Stepwise multiple regression allow all potential predictors to be considered simultaneously and permits choice of combination of variables providing the most predictive power (Polit & Hungler, 1978).

Summary

This study was designed to explore the relationships among perceived health status, social support, health-related hardiness, and health promotion behaviors in non-institutionalized well older adults. The study also explored differences in health-related hardiness among elderly who live in their home and who live in

retirement villages. The Pearson Product Moment Correlation Coefficient and multiple regression analysis were used for data analysis.

CHAPTER 4

ANALYSIS OF DATA

This chapter presents an analysis of the data received from the individual questionnaires and a discussion of the pertinent reliability findings. The data obtained from the subjects will be summarized and described using descriptive statistics. The scores for the Health Related Hardiness Scale, Health Promotion Lifestyle Profile, Perceived Health Status, and Norbeck Social Support Questionnaire will be discussed according to the entire sample. Finally the inferential data will be presented.

Description of Sample

The sample consisted of 100 older adults living independently in the central part of Texas. This area was chosen because of the high concentration of older adults who have maintained an independent living status in their homes or retirement centers.

The sample consisted of 62 (62%) females and 38 (38%) males. Ages varied from 65 to 89 years with a mean of 75.4 years and a standard deviation of 6.4. (see Table 1). The sample was predominantly Caucasian (n = 97, 97%). The

Table 1

Gender, Age, Ethnicity, and Marital Status of Independent Elderly Living in Homes and Retirement Centers (N=100)

Variable	Participants n	%
Gender		
Male	38	38.0
Female	62	62.0
Age		
65-69	22	22.0
70-74	22	22.0
75-79	29	29.0
80-89	27	27.0
Ethnicity		
Caucasian	97	97.0
Black	3	3.0
Marital Status		
Married	55	55.0
Widowed	43	43.0
Single, Never Married	2	2.0

majority of the subjects (55%) reported being married, while 43% reported being widowed (see Table 1).

The mean educational level was 12.75 years with 28 (28%) of the participants having less than a high school education, 37 (37%) having a high school diploma, and 55 (55%) with varying levels of college education (see Table 2). The mean total family income was $26,953 with a range from $7,000 to $100,000. The frequency distribution

of yearly total family income indicates 45% reported $15,000 a year or less, 30% reported income from $16,000 to $35,000, and 25% reported an income over $36,000 to $100,000 (see Table 2). Only 40 (40%) of the participants reported a total yearly family income. Over half (n = 55, 55%) reported living in their home while the remaining subjects lived independently in a retirement center (see Table 2).

Table 2

Education, Income, and Residence of Elderly Sample (N=100)

Variable	Participants n	%
Education		
Less than High School	28	28.0
High School Graduate	37	37.0
Attended College/Training Program	13	13.0
College Graduate	10	10.0
Post Baccalaureate Education	12	12.0
Income		
$7,000 - $15,000	18	18.0
$16,000 - $25,000	4	4.0
$26,000 - $35,000	8	8.0
$36,000 - $45,000	5	5.0
$46,000 - $55,000	1	1.0
$56,000 - $100,000	4	4.0
No Income Reported	60	60.0
Residence		
Home	55	55.0
Retirement Village	45	45.0

Descriptive Characteristics of Instruments

The Health Promotion Lifestyle Profile, Perceived Health Status, Norbeck Social Support Questionnaire, and Health Related Hardiness Scale were used in this study to measure participation in health-promoting activities, perceived health status, social support, and hardiness. Ranges, means, and standard deviations for the 100 participants were computed for each scale.

Health Promotion Lifestyle Profile

The HPLP is a 48-item summated behavior rating scale that employs a 4-point response format (1 = never, 2 = sometimes, 3 = often, and 4 = routinely) to measure the frequency of health-promoting behaviors. The scores for the total scale ranged from 1.71 to 3.85, with participants indicating that they participated in health promotion behaviors with a higher than average frequency ($\bar{x}$ = 2.92, SD = .45) (see Table 3).

Scores on each of the HPLP subscales varied reflecting level of client participation (see Table 3). Self-actualization Subscale (13 items) scores indicated subjects had a high participation in self-actualization behaviors ($\bar{x}$ = 3.19, S.D. - .57). Health Responsibility Subscale (10 items) scores indicated that subjects had an

Table 3

Ranges, Means, and Standard Deviations of Sample on HPLP

Scale	Ranges of Scores	Mean	Standard Deviation
Self-Actualization	1.31 - 4.0	3.19	.570
Health Responsibility	1.10 - 3.9	2.64	.592
Exercise	1.00 - 4.0	2.07	.760
Nutrition	1.00 - 4.0	3.09	.560
Interpersonal Support	2.00 - 4.0	3.29	.500
Stress Management	1.57 - 4.0	2.87	.630
Total Scale	1.71 - 3.85	2.92	.450

average participation in health responsibility behaviors ($\bar{x}$ = 2.64, S.D. = .59). Exercise Subscale (5 items) scores indicated that exercise behaviors were performed by subjects only "sometimes" ($\bar{x}$ = 2.07, S.D. = .76). Nutrition Subscale (6 items) scores indicated that participation in nutritional behaviors was done "often" ($\bar{x}$ = 3.09, S.D. = .56). Interpersonal Support Subscale (7 items) scores indicated that interpersonal support behaviors were often done ($\bar{x}$ = 3.29, S.D. = .50). Stress Management Subscale (7 items) scores reflected that this

behavior was done more than average ($\bar{x}$ = 2.87, S.D. = .63).

Perceived Health Status

The highest score attainable for Perceived Health Status is 9, indicating a high degree of perceived health status. Scores for this sample ranged from 2 to 9, with a mean of 6.14 (S.D. = 1.55) (see Table 4). The 75 to 79 age group scored the lowest (5.96), and the 70 to 74 age group scored the highest with an average of (6.45) as listed in Table 5.

Table 4

Distribution of Elderly by Scores on Perceived Health Status (N = 100)

Perceived Health Status Score	Participants n	(%)
0	0	0
1	2	2.0
2	3	3.0
3	6	6.0
4	28	28.0
5	15	15.0
6	25	25.0
7	17	17.0
8	4	4.0
9	0	0
Total	100	100.0

Table 5

Distribution of Mean Scores for Perceived Health Status by Age Group

Age Groups	Mean Scores
65 - 69	5.91
70 - 74	6.45
75 - 79	5.90
80 - 89	5.96

Norbeck Social Support Questionnaire

The NSSQ was used to measure the functional support the subjects received from relatives, friends, and others. The total scale measured the amount of affect, affirmation, and aid the subject received from identified supportive individuals. The scores on the total scale ranged from 0 to 298, with 0 indicating no support at all to 298, indicating a great deal of support (see Table 6). The mean for the total scale was 86.130, with a S.D. of 64.41 indicating little to no functional support received by the elderly. The mean for the Affect Subscale was

37.38, with a S.D. of 30.76 indicating that the supportive network was perceived as providing "little" love,

Table 6

Mean Scores for NSSQ

Range of Scale	Scores	Mean	Deviation
Affect	0 - 135	37.38	30.76
Affirmation	0 - 114	29.53	23.75
Aid	0 - 99	19.22	10.45

respect, and/or admiration to the elderly. The mean for the Affirmation Subscale was 29.53 with a S.D. of 23.75 meaning that the elderly perceived the supportive network as providing "little" to "no" emotional support in relation to the elderly subjects actions or thoughts. The mean for the Aid Subscale was 19.22 with a S.D. of 18.45. The Aid score reflects "little" to "no" aid and/or assistance available to the elderly subjects.

Health Related Hardiness Scale

Low scores on the HRHS indicate presence of the hardiness characteristic. Low scores on each of the three subscales within the HRHS indicate the presence of

control, commitment, and challenge. Individuals high in control believe and act as if they can influence the events they experienced. Those high in commitment tend to be involved in whatever they are doing, rather than performing in a perfunctory manner. Individuals high in challenge regard life changes as the norm and anticipate them as a stimulus for growth, rather than a threat to security.

The lowest score attainable on the Health Related Hardiness Scale is 40, indicating a high degree of hardiness. The lowest score for this sample was 63, with a reported range of 63 to 146, a median of 100, mean of 99.74, and a standard deviation of 20.18. Scores below the median score indicate hardiness. Forty-nine percent of this sample scored below the median (see Table 7).

Table 7

Ranges, Medians, Means, and Standard Deviations for HRHS

Scale	Range of Scores	Median	Mean	Standard Deviation
Control	14 - 84	41	40.22	8.35
Commitment	15 - 59	28	28.24	7.37
Challenge	13 - 50	33	31.28	7.86

Scores for the HRHS subscale, Control, ranged from 14 to 84, with low scores indicating high control. The lowest score for this sample was 15, with a reported range of 15 to 59, a median of 41, mean of 40.22, and a standard deviation of 8.35. Forty-eight percent of this sample scored below the median.

Scores for the HRHS subscale, Commitment, ranged from 13 to 78, with low scores indicating high commitment. The lowest score for this sample was 13, with a reported range of 13 to 50, a median of 28, mean of 28.24, and a standard deviation of 7.37. Fifty-three percent of this sample scored below the median.

Scores for the HRHS subscale, Challenge, ranged from 13 to 78, with low scores indicating high challenge. The lowest score for this sample was 14, with a reported range of 14 to 52, a median of 33, mean of 31.28, and a standard deviation of 7.86. Forty-nine percent of this sample scored below the median.

Reliability

The internal consistency of a tool is most frequently determined by the Cronbach's Coefficient Alpha statistic. This statistic measures the extent to which a score on one item is an indication of the score on any other item

contained within one instrument (Woods & Catanzaro, 1988). The higher the alpha, the greater the indication that an instrument is measuring only one attribute.

Cronbach's alpha coefficients were calculated for the Health Related Hardiness Scale, including each of the three subscales; the Health Promoting Lifestyle Profile, including each of the six subscales; and the Norbeck Social Support Questionnaire, with each of the three subscales. The coefficients for these scales were based on a sample of 100 cases of independent elderly.

The coefficient alpha for the Health Related Hardiness Scale was .8668. The subscale item alphas ranged from .679 for Control Subscale, .715 for Commitment Subscale, and .753 for Challenge Subscale.

The coefficient alpha for the Health Promoting Lifestyle Profile was .930. The subscale item alphas ranged from .884 for Self-Actualization Subscale, .812 for Health Responsibility Subscale, .709 for Exercise Subscale, .638 for Nutrition Subscale, .748 for Interpersonal Support Subscale, and .747 for Stress Management Subscale.

The coefficient alpha for the Norbeck Social Support Questionnaire was .962. The subscale item alphas for

the Affect, Affirmation, and Aid Subscales were .976, .969, and .858.

Summary

Data for the older adult sample has been described and summarized according to descriptive statistics. The data were described according to the variables of age, gender, ethnicity, marital status, educational level, income, and place of residence. The mean scores for Perceived Health Status, HRHS, HPLP, NSSQ, and related subscales were reported. The Cronbach's Coefficient Alpha was reported for all instruments tested with the sample. The next section of this chapter will include the findings of the study.

Findings

The purpose of this study was to explore the relationship among health status, social support, health-related hardiness, and health promotion behaviors of non-institutionalized elderly. Three research questions were identified and were analyzed using the Statistical Package for the Social Sciences (SPSS-X) (1988). The data were analyzed using Pearson Product Moment Correlation. Multiple Regression was also used to determine if the independent variables of health-related hardiness,

perceived health status, and social support were predictors of health-promoting lifestyle behaviors.

Research question 1 was what is the relationship between participation in health-promoting behaviors and perceived health status in noninstitutionalized, community-based elderly. A Pearson Product Moment Correlation was used to analyze the data.

Perceived health status is represented by the subject's self-rating score on a Cantril ladder (Cantril, 1965). Health-promoting behaviors are represented by the total score on the Health Promotion Lifestyle Profile (Walker et al., 1987). A significant, positive relationship ($r = .28$, $p \leq .01$) was found between

Table 8

Pearson Correlation Coefficients for Perceived Health Status and HPLP Scale and Subscales

	Perceived Health Status
HPLP Total Score	.280*
Self-Actualization	.356**
Health Responsibility	.039
Exercise	.148
Nutrition	.189
Interpersonal Support	.222*
Stress Management	.285**

* $p < .05$
** $p \leq .01$

Perceived Health Status and the HPLP (see Table 8). The shared variance between perceived health status and health-promoting behaviors was 7.8%. The relationship of perceived health status with the various components of health-promoting behavior was further explored. As seen in Table 8, the relationships between perceived health status and the HPLP subscales were examined. The Pearson r correlation between perceived health status and the HPLP subscale, Self-Actualization, was .356, $p \leq .01$. The shared variance between perceived health status and Self-Actualization was 12.7%. The Pearson r correlation between the HPLP subscale, Interpersonal Support, and perceived health status was .222, $p \leq .05$, and explains 4.9% of the shared variance. A significant positive relationship ($r = .285$, $p \leq .01$) was found between HPLP subscale, Stress Management and perceived health status. The shared variance between perceived health status and Stress Management was 8.1%.

Research question 2 was what is the relationship between participation in health-promoting behaviors and social support in noninstitutionalized, community-based elderly. The data were analyzed using a Pearson Product Moment Correlation.

Social support is represented by the total score on the Norbeck Social Support Questionnaire (Norbeck, 1981), and health-promoting behaviors is represented by the total score on the HPLP (Walker et al, 1987). A significant, positive relationship (r = .312, $p \leq .01$) was found between social support (NSSQ) and health promoting behaviors (HPLP) (see Table 9). The shared variance between support and health behaviors was 9.7%.

Table 9

Pearson Correlation Coefficients for NSSQ Subscales and HPLP Subscales

	NSSQ			
	Total Functional	Affect	Affirmation	Aid
Total Score				
HPLP	.312**	.205*	.258**	.419*
Self-Actualization	.281**			
Health Responsibility	.284**			
Exercise	.180			
Nutrition	.209*			
Interpersonal Support	.212*			
Stress Management	.207*			

* $p \leq .05$
** $p \leq .01$

Relationships between NSSQ and the HPLP subscales were examined (Table 9). The Pearson r correlations were statistically significant ($p \leq .01$) between the NSSQ and

the HPLP subscales, Self-Actualization (r = .281) and Health Responsibility (r = .284). The Pearson r correlations between the NSSQ and the HPLP subscales, Nutrition (r = .209), Interpersonal Support (r = .212), and Stress Management (r = .207) were significant at the .05 level.

The relationships between the support subscales and HPLP were also examined. The Pearson r correlations between the support subscales, Affect (r = .205, $p \leq .05$), Affirmation (r = .258, $p \leq .01$), and Aid (r = .419, $p \leq .05$) were significant. Shared variance between the HPLP and Affect, Affirmation, and Aid was 4.2%, 6.7%, and 17.6% respectively.

Research question 3 was what is the relationship between health-promoting behaviors and health-related hardiness in noninstitutionalized, community-based elderly. Data were analyzed by Pearson Product Moment Correlation.

Health-related hardiness is represented by the total score on the HRHS, and and health-promoting behaviors is represented by the total score on the HPLP. There was a significant inverse relationship (r = -.548, $p \leq .01$) between health-related hardiness and health-promoting

behaviors. The variance shared between these variables is 30%.

As seen in Table 10, health promotion behaviors were negatively correlated to the HRHS subscales of Control, (-.395, $p \leq .01$), Commitment (-.569, $p \leq .01$), and Challenge (-.452, $p \leq .01$). The variance shared between the variables Control, Commitment, and Challenge and health-promoting behaviors was 15.6%, 32.4%, and 20.4% respectively. The relationship between health-related hardiness behaviors and components of health promotion behaviors were measured. The Pearson r correlation

Table 10

Pearson Correlation Coefficients for HRHS Subscales and HPLP Subscales

	Total HRHS	Control	Commitment	Challenge
Total Score				
HPLP	-.548**	-.395**	-.569**	-.452**
Self-Actualization	-.386**			
Health Responsibility	-.517**			
Exercise	-.435**			
Nutrition	-.465**			
Interpersonal Support	-.183			
Stress Management	-.492**			

* $p \leq .05$
** $p \leq .01$

between the HPLP subscale, Self-Actualization, and HRHS was -.386, $p \leq .01$, with a shared variance of 14.9%. The Pearson r correlation for the HPLP subscale, Health Responsibility, with the HRHS was -.517, $p \leq .01$. The shared variance between Health Responsibility and health-related hardiness was 26.7%. The Pearson r correlations between the HPLP subscales, Exercise and Nutrition, and HRHS were -.435, $p \leq .01$ and -.465, $p \leq .01$, with shared variances of 18.9% and 21.6% respectively. The Pearson r correlation between the HPLP subscale, Stress Management, and HRHS was -.492, $p \leq .01$. The shared variance between Stress Management and health-related hardiness was 24.2%.

Stepwise multiple regression was used to analyze the data related to research questions one, two, and three. This procedure was used to assess which independent variables predicted the greatest amount of variance of the dependent variable, health-promoting behaviors (HPLP). Waltz and Bausell (1987) suggested that the stepwise multiple regression can determine how much variance in the criterion variable can be explained by the predictor variables. The predictor variable with the strongest

relationship to the criterion variable is entered first in the regression equation after which successive variables are entered. The variables are added or deleted depending upon their contribution to the unaccounted variation of the criterion variable.

A stepwise multiple regression analysis was done on the total health promotion score using the HRHS scores, the Perceived Health Status scores, and the NSSQ scores. As shown in Table 11, the three independent variables combined to explain 34.9% of the variance in health-promoting lifestyle, with each of the variables

Table 11

Health Promoting Lifestyle Profile Scores Regressed on Concurrent Measures of Health-Related Hardiness, Perceived Health Status, and Social Support

Explanatory Variables	Adjusted R	R Change	Beta	Univariate F	p	Simple r
Health Related Hardiness	.2927	.2998	-.4696	41.96	.001	.5475
Perceived Health Status	.3260	.0398	.2013	24.94	.001	.5828
Social Support	.3489	.0290	.1768	18.68	.001	.6072

making a statistically significant, $p \leq .001$, contribution to the regression equation. The HRHS was the single best predictor for health promotion behavior, acounting for 29.3% of the variance. The demographic variables were entered into the regression equation but did not explain any of the reported variance.

Summary

The sample was described in terms of age, gender, ethnicity, marital status, educational level, income, and place of residence. Reliability was presented in terms of the Cronbach's Coefficient Alpha statistic for the instruments used. The alpha for the total sample (N = 100) on the HPLP was .9302. The alpha for the total sample (N = 100) on the HRHS was .8668, and the alpha on the NSSQ was .9617.

Findings were presented for each of the four research questions. Based on an established level of significance of .05 for the study, a significant relationship was found between the dependent and independent variables when tested by Pearson's r and multiple regression. Additionally, regression equation revealed that total scores on the HRHS, Perceived Health Status, and NSSQ accounted for the greatest amount of variance on the HPLP.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

The purpose of the study was to analyze the relationships between health-promoting behaviors and perceived health status, social support, and health-related hardiness. A nonexperimental, correlational design was employed to explore the relationships. The criterion variable, health promotion behaviors, was measured by the Health-Promoting Lifesyle Profile, and the predictor variables of perceived health status, social support, and health-related hardiness were measured by Perceived Health Status, Norbeck Social Support Questionnaire, and the Health Related Hardiness Scale.

One hundred individuals age 65 and over living independently at home or in a retirement community were selected by a convenience method to participate in the study. The sample was primarily Caucasian, with more than half being married. There were more female than male participants.

The three research questions addressed in this study were to clarify the relationships between participating in

health-promoting behaviors and other selected variables. Data were analyzed by several methods. The demographic data were analyzed using frequency distributions to describe the sample. The instruments used had been studied and validated through previous research as reliable and valid tools. Further evaluation of reliability was established with the use of Cronbach's Coefficient Alpha. Quantitative analysis incorporated the use of descriptive statistics, the Pearson Product Moment Correlation Coefficient statistics, and the multiple regression coefficient statistic.

Discussion of Demographic Findings

Demographically, the elderly sample population was very similar to the elderly population. The higher percentage of female subjects is consistent with norms reported in the population and was expected since literature supports that longevity for females is slightly higher than for males. The sample mean age of 75.4 years is similar to the mean age in the elderly population. The mean educational level of the sample was high (12.75 years), but is probably related to the convenience sampling method. Another finding consistent with the elderly population was that over half of the sample was

married (55%). Only 40% of the sample reported their annual income. Many elderly view this as very confidential information and are very cautious in reporting these figures.

Discussion of Findings

Three research questions were examined in this study. Relevant findings for each research question will be discussed and compared with literature findings.

The first research question asked what is the relationship between participation in health-promoting behaviors and perceived health status in noninstitutionalized, community-based elderly. On analysis of data, it was found that the Pearson Product Moment Correlation Coefficient revealed a small, although significant relationship between the total score on Perceived Health Status and the Health Promotion Lifestyle Profile ($r = .280$, $p \leq .01$). Further analysis with the Pearson Product Moment Correlation coefficient revealed a significant relationship ($p \leq .01$) between the HPLP subscales of Self-Actualization ($r = .356$) and Stress Management ($r = .285$) and the total score on Perceived Health Status. The HPLP subscale, Interpersonal Support was slightly correlated ($r = .222$) at the .05 level of

signifcance. These findings indicate that there is a low, but significant correlation between health promotion behaviors and perceived health status. Research reported by Whitelaw (1989), Oudt (1988), and Hanner (1986) support the positive correlation between health status and health promotion behaviors. Further examination of the HPLP subscales indicates that older adults who scored higher on the HPLP subscales of Self-Actualization, Stress Management, and Interpersonal Support also rated their health status high. These findings are consistent with the research reported by Speake, Cowart, and Pellet (1989), that positive perceptions of present health are associated with higher scores on Self-Actualization and Interpersonal Support subscales. Duffy (1989) reported similar findings with moderate correlations between health status and self-actualization scores.

In this study, the multiple regression coefficient also revealed a significant relationship ($p \leq .001$) between the independent and dependent variables providing additional support for the relationship between perceived health status and health promotion behaviors. The significant relationship between perceived health status and health promotion also supports the theoretical assumptions that underlie Pender's model in that the

importance an individual places on enhancing health status is likely to affect the occurrence and intensity of health-promoting behaviors.

The second research question was what is the relationship between participation in health-promoting behaviors and social support in noninstitutionalized, community-based elderly. Upon analysis of the statistical findings related to this question, the Pearson Product Moment Correlation Coefficient revealed a small, although significant relationship between the NSSQ and the total score on the HPLP ($r = .312$, $p \leq .01$). Further examination revealed significant relationships with all the HPLP subscales except for Exercise. Older adults who reported higher levels of social support reported more frequent health promotion behaviors. These findings are consistent with the theoretical assumptions of Pender's (1987) Health Promotion Model in that interpersonal factors may influence health promotion behaviors. In this study, the multiple regression coefficient also revealed a significant relationship ($p \leq .001$) between social support and health promotion behaviors. The results supported consistent findings (Pascucci, 1987; Muhlenkamp and Sayles, 1986; and Hubbard, Muhlenkamp, and Brown,

1984) that social support does increase the frequency of health promotion behaviors.

The investigation of the relationship between the components of social support and health promotion behaviors revealed significant findings. There were positive correlations between the NSSQ subscale, Affect ($r = .205$, $p \leq .05$), Affirmation ($r = .258$, $p \leq .01$), and Aid ($r = .419$, $p \leq .05$). Affect and affirmation are viewed as the emotional component of social support; and as indicated by the findings, may contribute to the frequency of health promotion behaviors. However, the variance shared between the aid component of social support and health promotion behaviors was significantly greater (17.6%). Both of these findings are similar to Norbeck, Lindsey, and Carrieri's (1981) report that both affect and affirmation were significant predictors in establishing more positive attitudes toward health care. They also reported that the aid component of social support becomes more significant in reducing helplessness and providing assurance of the stability of the environment. The aid component of social support may provide the element of support that enables older adults to continue with health promotion behaviors.

The third research question was what is the relationship between participation in health-promoting behaviors and health-related hardiness in noninstitutionalized, community-based elderly. The Pearson Product Moment Correlation Coefficient revealed a significant inverse relationship between health-related hardiness and health promotion behaviors (r = -.548, $p \leq .01$). Scores below the median score indicate high levels of health-related hardiness on the HRHS; therefore, the reported negative correlation between the HRHS and HPLP indicated that subjects who rated higher in health-related hardiness also had increased frequency of health promotion behaviors. The findings indicated that presence of health-related hardiness may affect how older adults approach health promotion behaviors. A breakdown of the correlations according to the HRHS subscales indicated that the HRHS subscale, Commitment (r = -.569, $p \leq .01$), had the strongest correlation with health promotion behaviors. According to Pollock's (1986) definition of health-related hardiness, the presence of health-related hardiness in the sample of older adults indicated that they believe and act as if they can influence events they experienced, that they are involved

in whatever they are doing, and regard life changes as exciting, a stimulus for future growth.

Statistical analysis with stepwise multiple regression revealed that health-related hardiness was the single best predictor for health promotion behavior accounting for 29.9% of the variance. The relationship was significant at $p \leq .001$. Older adults who possess the personality characteristics of health-related hardiness may participate in health promotion behaviors with a greater frequency than older adults who lack this personality characteristic.

Very little literature exists regarding health-related hardiness and health promotion behaviors among the elderly. The results supported findings consistent with Magnani's (1986) research that older adults who had higher levels of hardiness had higher levels of activity. A similar study by Pollock (1989) revealed that the presence of hardiness was a significant factor in adaptation to chronic health problems.

Additional findings focused on the relationships between health-related hardiness and the dimensions of health promotion behaviors. The HRHS was negatively correlated ($p \leq .01$) with each of the HPLP subscales except for Interpersonal Support. There was no

significant correlation between HRHS and Interpersonal Support. This may be explained by the low social support scores among the elderly. As the elderly's social network decreases, their expectations for assistance may also decrease, possibly diminishing their sense of control or commitment to certain behaviors. These results were somewhat inconsistent with Lambert, Lambert, Klippie, and Menshaw (1990), who reported that women who had higher numbers in their social support system were more likely to be characterized as hardy.

Conclusions and Implications

The analysis supports the research questions that there is a relationship between participation in health-promoting behaviors and perceived health status, social support, and health-related hardiness in noninstitutionalized, community-based elderly. The findings would tend to indicate that the elderly who perceived their health status as high also had a tendency to participate in health-promoting behaviors. Elderly subjects had an above average rating of their health status indicating that they felt healthy in comparison to their peers.

The positive correlation between social support and health promotion behaviors indicated the importance of having a supportive network of friends and relatives to enhance participation in health promotion behaviors. Although this sample did not report high levels of social support, findings did indicate that all levels of social support were important in relation to participation in health promotion behaviors. Findings did indicate that as subjects aged, they did not participate in health-promoting behaviors with the same frequency. The subjects also indicated lower levels of emotional support as they aged. The decreasing level of emotional support with age may account for the decreased participation in health-promoting behaviors with the older subjects. The relationship of these variables may need to be further explored utilizing a larger sample of older adults.

The sample as a whole scored lower on the NSSQ, indicating that they did not perceive themselves as receiving high levels of support as compared to the normative data reported for a younger population (Norbeck, Lindsey, and Carrieri, 1983). The elderly lose many significant sources of support as they age through death, relocation, or disability, and this may attribute for the lower reported scores.

The association between health-related hardiness and health promotion behaviors is significant as this relationship has not been reported in the literature with elderly subjects. Findings indicated that health-related hardiness is a a significant predictor of participation in health promotion behaviors and may add a new dimension to Pender's (1987) Health Promotion Model with continued support from ongoing research. Although the sample size was small, these findings are significant for the elderly population. The subjects' HRHS scores indicated a high presence of health-related hardiness which may indicate that for the elderly, the personality characteristic of health-related hardiness may be a determinant for continued participation in health promotion behaviors. Data indicated that the elderly were more involved (commited) in participating in health promotion behaviors and viewed health promotion behaviors as positive change in their life. There was a lower correlation between control and HPLP possibly indicating that the elderly may feel that they have less control over lifestyle factors in their lives, such as the level of exercise possible for their age or ability or the choice of nutritious foods limited by special diets.

Implications from this study are significant to the population from which the sample was drawn. Data collection with the elderly is often slow and time consuming due to their slowed responses and need to explain every answer or situation encountered. However, efforts should be continued to explore and explain the relationships between health promotion behaviors and predictive variables. Nursing interventions with older adults must continue to emphasize the importance of health promotion behaviors. The elderly may require more emotional support from health care workers to continue healthy life styles as other supportive networks are less able to provide the needed support. The enhancement or teaching of health-related hardiness behaviors to the elderly may be significant in maintaining health-promoting behaviors. While realizing the weakness of correlations as a limitation of this study, nursing intervention focused on strengthening the level of health knowledge, responsibility, movitvation, and health-related hardiness in older adults would greatly affect the independence and quality of life of this growing age group. These relationships need to be tested at the next level of research in order to improve the delivery of health care to the older adult.

Recommendations for Further Study

Further research on the participation in health promotion behaviors and the affect of health-related hardiness and social support for older adults may be derived from this study. To further enhance the body of nursing knowledge, the recommendations evolved from this research are suggested.

1. This study should be replicated using the same design, increasing the sample size, and utilizing a shorter, reliable tool to measure social support.

2. An experimental design should be utilized to test the effect of health-related hardiness classes on participation in health-promoting behaviors with the older adult.

This study indicated that social support and health-related hardiness are predictors of participation in health-promoting behaviors. Further testing is needed to determine what approaches or methods will enhance the older adult's participation in health promotion programs.

One approach would be to develop a community-based, wellness-oriented program specific for the older population in order to maximize continued participation in health promotion activities. Utilizing an experimental design, two groups of older adults would enroll in the

health promotion program. Each group would complete initial health-risk appraisals and would be encouraged to engage in two organized programs focusing on exercise and nutrition. Both the control and experimental groups would meet on a regular basis with the health care professional to discuss concerns and progress with the program. The experimental group would also participate in health-related hardiness classes. Social support would be enhanced with both groups through early identification of supportive network and the development of a "buddy system" or support group among the participants. Measurement of the three variables, social support, health-related hardiness, and health-promoting behaviors would be completed at the beginning and end of the program. A second health-risk appraisal would be completed at the end of the program.

Because of the variation in the older adult's supportive network, the influence of social support may be examined more critically in a controlled environment such as a retirement center. Social support becomes a major component or service offered to residents and is available to those who desire this contact.

Development of community-based senior programs that utilize volunteers, telephone contact, and/or neighborhood watch leaders may be examined as methods of increasing supportive networks for the elderly. Once a program is established, ways of enhancing health-promoting behaviors among these groups can be tested for effectiveness.

Longitudinal studies of established health promotion/wellness programs among the elderly will provide process and outcome evaluative data. These studies may provide answers regarding which health promotion strategies are most effective in helping older adults at various functional levels and with various resources change lifestyle behaviors as well as identifying the frequency of follow-up sessions to minimize attrition and maximize intended outcomes.

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APPENDIX A

Health-Promoting Lifestyle Profile

LIFESTYLE PROFILE

DIRECTIONS: This questionnaire contains statements regarding your present way of life or personal habits. Please respond to each item as accurately as possible, and try not to skip any item. Indicate the regularity with which you engage in each behavior by circling:

N for never, S for sometimes, O for often, or R for routinely.

		NEVER	SOMETIMES	OFTEN	ROUTINELY
1.	Eat breakfast.	N	S	O	R
2.	Report any unusual signs or symptoms to a physician.	N	S	O	R
3.	Like myself.	N	S	O	R
4.	Perform stretching exercises at least 3 times per week.	N	S	O	R
5.	Choose foods without preservatives or other additives.	N	S	O	R
6.	Take some time for relaxation each day.	N	S	O	R
7.	Have my cholesterol level checked and know the result.	N	S	O	R
8.	Am enthusiastic and optimistic about life.	N	S	O	R
9.	Feel I am growing and changing personally in positive directions.	N	S	O	R

10.	Discuss personal problems and concerns with persons close to me.	N S O R
11.	Am aware of the sources of stress in my life.	N S O R
12.	Feel happy and content.	N S O R
13.	Exercise vigorously for 20-30 minutes at least 3 times per week.	N S O R
14.	Eat 3 regular meals a day.	N S O R
15.	Read articles or books about promoting health.	N S O R
16.	Am aware of my personal strengths and weaknesses.	N S O R
17.	Work toward long-term goals in my life.	N S O R
18.	Praise other people easily for their accomplishments.	N S O R
19.	Read labels to identify the nutrients in packaged food.	N S O R
20.	Question my physician or seek a second opinion when I do not agree with recommendations.	N S O R
21.	Look forward to the future.	N S O R
22.	Participate in supervised exercise programs or activities.	N S O R
23.	Am aware of what is important to me in life.	N S O R
24.	Enjoy touching and being touched by people close to me.	N S O R
25.	Maintain meaningful and fulfilling interpersonal relationships.	N S O R

26.	Include roughage/fiber (whole grains, raw fruits, raw vegetables) in my diet.	N	S	O	R
27.	Practice relaxation or meditation for 15-20 minutes daily.	N	S	O	R
28.	Discuss my health care concerns with qualified professionals.	N	S	O	R
29.	Respect my own accomplishments.	N	S	O	R
30.	Check my pulse rate when exercising.	N	S	O	R
31.	Spend time with close friends.	N	S	O	R
32.	Have my blood pressure checked and know what it is.	N	S	O	R
33.	Attend educational programs on improving the environment in which we live.	N	S	O	R
34.	Find each day interesting and challenging.	N	S	O	R
35.	Plan or select meals to include the "basic four" good groups each day.	N	S	O	R
36.	Consciously relax muscles before sleep.	N	S	O	R
37.	Find my living environment pleasant and satisfying.	N	S	O	R
38.	Engage in recreational physical activities (such as walking, swimming, soccer, bicycling).	N	S	O	R
39.	Find it easy to express concern, love and warmth to others.	N	S	O	R
40.	Concentrate on pleasant thoughts at bedtime.	N	S	O	R
41.	Find constructive ways to express my feelings.	N	S	O	R

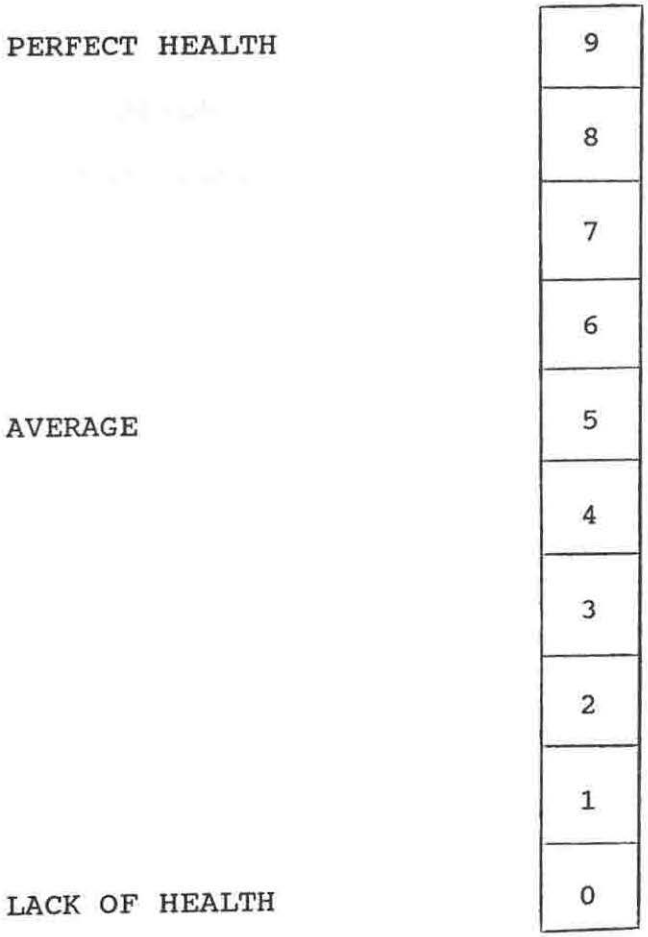
42.	Seek information from health professionals about how to take good care of myself.	N	S	O	R
43.	Observe my body at least monthly for physical changes/danger signs.	N	S	O	R
44.	Am realistic about the goals that I set.	N	S	O	R
45.	Use specific methods to control my stress.	N	S	O	R
46.	Atttend educational programs on personal health care.	N	S	O	R
47.	Touch and am touched by people I care about.	N	S	O	R
48.	Believe that my life has purpose.	N	S	O	R

APPENDIX B

Perceived Health Status

PERCEIVED HEALTH STATUS

DIRECTIONS: PLEASE LOOK AT THE DRAWING OF THE LADDER DIRECTLY BELOW. SUPPOSE THAT THE TOP OF THE LADDER REPRESENTS THE BEST POSSIBLE HEALTH FOR YOU. CIRCLE THE NUMBER OF THE LADDER THAT IS CLOSEST TO HOW YOU WOULD RATE YOUR OWN HEALTH AT THE PRESENT TIME.



APPENDIX C

Norbeck's Social Support Questionnaire

SOCIAL SUPPORT QUESTIONNAIRE

PLEASE READ ALL DIRECTIONS
ON THIS PAGE BEFORE STARTING

Please list each significant person in your life on the next page. Consider all the persons who provide personal support for you or who are important to you.

Use only first names or initials, and then indicate the relationship, as in the following example:

EXAMPLE

	First Name or Initials	Relationship
1.	James	spouse
2.	Linda	friend
3.		
4.		

Use the following list to help you think of the people important to you, and list as many people as apply in your case.

- Spouse or Partner
- Family Members or Relatives
- Work or School Associates
- Neighbors
- Health Care Providers
- Counselor or Therapist
- Minister/Priest/Rabbi
- Other

Please list each significant person in your life on the lines below. You do not have to use all 24 spaces. Use as many spaces as you have important persons in your life.

Personal Network

	First Name or Initials	Relationship
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		
18.		
19.		
20.		
21.		
22.		
23.		
24.		

For each person you list, please answer the following questions by writing in the number that applies.

1 = Not At All

2 = A Little

3 = Moderately

4 = Quite A Bit

5 = A Great Deal

	Question 1: How much does this person make you feel liked or loved?	Question 2: How much does this person make you feel respected or admired?
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		
18.		
19.		
20.		
21.		
22.		
23.		
24.		

1 = Not At All

2 = A Little

3 = Moderately

4 = Quite A Bit

5 = A Great Deal

	Question 3: How much can you confide in this person?	Question 4: How much does this person agree with or support your actions or thoughts?
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		
18.		
19.		
20.		
21.		
22.		
23.		
24.		

1 = Not At All

2 = A Little

3. = Moderately

4 = Quite A Bit

5 = A Great Deal

Question 5:
If you needed to borrow $10, a ride to the doctor, or some other immediate help, how much could this person usually help?

Question 6:
If you were confined to bed for several weeks, how much could this person help you?

1. _____ _____
2. _____ _____
3. _____ _____
4. _____ _____
5. _____ _____
6. _____ _____
7. _____ _____
8. _____ _____
9. _____ _____
10. _____ _____
11. _____ _____
12. _____ _____
13. _____ _____
14. _____ _____
15. _____ _____
16. _____ _____
17. _____ _____
18. _____ _____
19. _____ _____
20. _____ _____
21. _____ _____
22. _____ _____
23. _____ _____
24. _____ _____

Question 7: How long have you known this person?	Question 8: How frequently do you usually have contact with this person? (phone calls, visits, or letters)
1 = Less Than 6 Months 2 = 6 To 12 Months 3 = 1 To 2 Years 4 = 2 To 5 Years 5 = More Than 5 Years	5 = Daily 4 = Weekly 3 = Monthly 2 = A Few Times A Year 1 = Once A Year Or Less
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____
7. _____	_____
8. _____	_____
9. _____	_____
10. _____	_____
11. _____	_____
12. _____	_____
13. _____	_____
14. _____	_____
15. _____	_____
16. _____	_____
17. _____	_____
18. _____	_____
19. _____	_____
20. _____	_____
21. _____	_____
22. _____	_____
23. _____	_____
24. _____	_____

PLEASE BE SURE YOU HAVE RATED EACH PERSON ON EVERY QUESTION. GO ON TO THE NEXT PAGE.

9. During the past year, have you lost any important relationships due to moving, a job change, divorce or separation, death, or some other reason?

0. No 1. Yes

IF YES:

9A. Please indicate the number of persons from each category who are no longer available to you.

_____Spouse or Partner

_____Family Members or Relatives

_____Friends

_____Work or School Associates

_____Neighbors

_____Health Care Providers

_____Counselor or Therapist

_____Minister/Priest/Rabbi

_____Other (Specify)

9B. Overall, how much of your support was provided by these people who are no longer available to you?

0. None At All

1. A Little

2. A Moderate Amount

3. Quite A Bit

4. A Great Deal

APPENDIX D

Health-Related Hardiness Scale

HEALTH-RELATED HARDINESS SCALE

INSTRUCTIONS:

This is a questionnaire designed to determine the way in which different people view certain important issues related to their health. Each item is a belief statement with which you may agree or disagree. Beside each statement is a scale which ranges from strongly disagree (1) to strongly agree (6). For each item we would like you to circle the number that represents the extent to which you disagree or agree with the statement. Please make sure that you answer every item and that you circle only one number per item.

		DISAGREE			AGREE		
		STRONGLY	MODERATELY	SLIGHTLY	SLIGHTLY	MODERATELY	STRONGLY
1.	When I get sick I am to blame.	1	2	3	4	5	6
2.	I can avoid illness, if I take care of myself.	1	2	3	4	5	6
3.	I find it difficult to imagine enthusiasm about good health.	1	2	3	4	5	6
4.	Luck plays a big part in determining how soon I will recover from an illness.	1	2	3	4	5	6
5.	No matter how hard I try to maintain my health, my efforts will accomplish very little.	1	2	3	4	5	6
6.	I am in control of my health.	1	2	3	4	5	6

		DISAGREE			AGREE		
		STRONGLY	MODERATELY	SLIGHTLY	SLIGHTLY	MODERATELY	STRONGLY
7.	I admire people who work hard to improve their health.	1	2	3	4	5	6
8.	It is more important to have financial security than good health.	1	2	3	4	5	6
9.	The ideas about health promotion and illness prevention are social inventions to limit freedom of action.	1	2	3	4	5	6
10.	My good health is largely a matter of good fortune.	1	2	3	4	5	6
11.	No matter what I do, I'm likely to get sick.	1	2	3	4	5	6
12.	I find it boring to eat and exercise properly to maintain my health.	1	2	3	4	5	6
13.	The main thing which affects my health is what I myself do.	1	2	3	4	5	6
14.	Changes taking place in health care are not exciting to me.	1	2	3	4	5	6
15.	I find people who are involved in health promotion interesting.	1	2	3	4	5	6

		DISAGREE			AGREE		
		STRONGLY	MODERATELY	SLIGHTLY	SLIGHTLY	MODERATELY	STRONGLY
16.	Setting goals for health is unrealistic.	1	2	3	4	5	6
17.	Most things that affect my health happen to me by accident.	1	2	3	4	5	6
18.	Close relationships with others contribute to my mental and physical well-being.	1	2	3	4	5	6
19.	Changes taking place in health care will have no effect on me.	1	2	3	4	5	6
20.	If I get sick, it is my own behavior which determines how soon I get well again.	1	2	3	4	5	6
21.	I do not find it interesting to learn about health.	1	2	3	4	5	6
22.	I will stay healthy if it's meant to be.	1	2	3	4	5	6
23.	I am not interested in exploring new health care regimens or programs to improve my health.	1	2	3	4	5	6
24.	A close relationship with my family has no effect on my health.	1	2	3	4	5	6

		DISAGREE			AGREE		
		STRONGLY	MODERATELY	SLIGHTLY	SLIGHTLY	MODERATELY	STRONGLY
25.	The only reason to be involved in the health promotion movement is to increase my lifespan.	1	2	3	4	5	6
26.	No matter what I do, if I am going to get sick, I will get sick.	1	2	3	4	5	6
27.	I feel no need to try to maintain my health, because it makes no difference anyway.	1	2	3	4	5	6
28.	The current focus on health promotion is a fad that will probably disappear.	1	2	3	4	5	6
29.	No matter how hard I work to promote health for society, it never seems to improve.	1	2	3	4	5	6
30.	Our society holds no worthwhile goals or values about health.	1	2	3	4	5	6
31.	If I take the right actions, I can stay healthy.	1	2	3	4	5	6
32.	I get excited about the possibility of improving my health.	1	2	3	4	5	6
33.	I am determined to be as healthy as I can be.	1	2	3	4	5	6

		DISAGREE			AGREE		
		STRONGLY	MODERATELY	SLIGHTLY	SLIGHTLY	MODERATELY	STRONGLY
34.	When my health is threatened, I view it as a challenge that must be overcome.	1	2	3	4	5	6
35.	I read everything I can about health.	1	2	3	4	5	6
36.	I can be as healthy as I want to be.	1	2	3	4	5	6
37.	I see nothing wrong with taking risks with my health.	1	2	3	4	5	6
38.	When something goes wrong with my health, I do everything I can to get at the root of the problem.	1	2	3	4	5	6
39.	I have little influence over my health.	1	2	3	4	5	6
40.	Adequate rest is part of my daily routine.	1	2	3	4	5	6

APPENDIX E

Copyright Permission for Health Promotion Model

3713 Redbud Road
Temple, TX 76502
December 18, 1990

Appleton & Lange
25 Van Zant Street
East Norwalk, Connecticut 06855

Dear Sirs:

I am a doctoral student in nursing at Texas Woman's University at Houston, Texas, and am conducting a study as part of the requirements for the degree. I am studying the relationship between health promotion behaviors and social support, perceived health status, and health-hardiness in non-institutionalized well elderly.

I have obtained permission to use Pender's Health Promotion Model in my study (Enclosed). The model provides an organized means of examining how variables may influence older adults' decisions to engage in health-promotion behaviors.

I am asking for permission to reproduce the Health Promotion Model as diagrammed on page 58, Figure 3-1, in Pender, N.J., Health Promotion in Nursing Practice, 1987 for inclusion in my written dissertation. Second Edition

Any assistance would be greatly appreciated.

Sincerely,

Cindy Jones

Cindy Jones, R.N.C., M.S.N.
Doctoral Candidate

; PLEASE FULLY CREDIT THE SOURCE --
AUTHOR, TITLE, EDITION, APPLETON & LANGE, NORWALK, CT, 1987

Joan P Wilson
12/27/90

APPENDIX F

Permission From Agencies

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

DALLAS CENTER
1810 INWOOD ROAD
DALLAS, TEXAS 75235

HOUSTON CENTER
1130 M. D. ANDERSON BLVD.
HOUSTON, TEXAS 77030

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE Hill Country Community Action, Inc., Aging Component - Senior Citizen Centers

GRANTS TO Cynthia J. Jones, R.N.C., M.S.N.
a student enrolled in a program of nursing leading to a Doctoral Degree at Texas Woman's University, the privilege of its facilities in order to study the following problem:

"Relationship of Participation in Health Promotion Behaviors to Health-Related Hardiness and Other Selected Factors in the Elderly"

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 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: 8-10-90

Louise Long — Director, Aging Compone
Signature of Agency Personnel

Cynthia Jones
Signature of Student

Anne Young
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.

/bc

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

DALLAS CENTER
1810 INWOOD ROAD
DALLAS, TEXAS 75235

HOUSTON CENTER
1130 M. D. ANDERSON BLVD.
HOUSTON, TEXAS 77030

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE Eldercare, Inc. 1206 E. 52nd Street, Austin, TX 78723

GRANTS TO Cynthia J. Jones, R.N.C., M.S.N.
a student enrolled in a program of nursing leading to a Doctoral Degree at Texas Woman's University, the privilege of its facilities in order to study the following problem:

"Relationship of Participation in Health Promotion Behaviors to Health-Related Hardiness and Other Selected Factors in the Elderly"

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1. The agency (may) (may not) be identified in the final report.
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3. The agency (wants) (does not want) a conference 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: Aug 6, 1990

Signature of Agency Personnel

Cynthia Jones
Signature of Student

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.

/bc

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

DALLAS CENTER
1810 INWOOD ROAD
DALLAS, TEXAS 75235

HOUSTON CENTER
1130 M. D. ANDERSON BLVD.
HOUSTON, TEXAS 77030

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE Trinity Place Apartments, 1203 Cushing Drive, Round Rock, TX

GRANTS TO Cynthia J. Jones, R.N.C., M.S.N.
a student enrolled in a program of nursing leading to a Doctoral Degree at Texas Woman's University, the privilege of its facilities in order to study the following problem:

"Relationship of Participation in Health Promotion Behaviors to Health-Related Hardiness and Other Selected Factors in the Elderly"

The conditions mutually agreed upon are as follows:

1. The agency (may) (may not) be identified in the final report.
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3. The agency (wants) (does not want) a conference 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: 8-17-90

Janet Dotton Porras, Manager
Signature of Agency Personnel

Cynthia Jones
Signature of Student

Anne Young
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.

/bc

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

DALLAS CENTER
1810 INWOOD ROAD
DALLAS, TEXAS 75235

HOUSTON CENTER
1130 M. D. ANDERSON BLVD.
HOUSTON, TEXAS 7703Q

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE Heritage Plaza Retirement Community 9121 N. Plaza, Austin, TX

GRANTS TO Cynthia J. Jones, R.N.C., M.S.N.
a student enrolled in a program of nursing leading to a Doctoral Degree at Texas Woman's University, the privilege of its facilities in order to study the following problem:

"Relationship of Participation in Health Promotion Behaviors to Health-Related Hardiness and Other Selected Factors in the Elderly"

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 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: Aug 6, 1990

Signature of Agency Personnel

Cynthia Jones
Signature of Student

Signature of Faculty Advisor

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

/bc

APPENDIX G

Letter To Participants

Dear Potential Participant:

My name is Cindy Jones, M.S.N., R.N.C. I am a doctoral nursing student at Texas Woman's University, Houston Center, and am conducting a research study as part of the requirements for the degree.

You are invited to participate in a research study of factors that influence the health promotion behaviors of men and women 65 years or older who reside in the central Texas area. You were selected as a possible participant in this study because the senior center which you attend has granted me permission to contact you.

If you decide to participate, you will be one of approximately 100 participants in the study. You will be asked to complete a packet of questionnaires about your health activities, how you would respond in certain situations, how you perceive your health, and level of support. These questionnaires will take approximately 30 to 45 minutes to complete. If needed, someone will be available to help you complete the questionnaires.

Any information obtained in connection with this study will remain confidential. Information from this study will be reported as group data, and you will never be personally identified.

You are under no obligation to participate in this study. Your decision whether or not to participate will not effect any services to which you are entitled and will not prejudice your future relations with Texas Woman's University. If you decide to participate, you are free to discontinue participation at any time without prejudice. Your completing and returning the questionnaires will be considered your consent to participate.

If you have any questions about this study now or at a later time, please contact me. I can be reached at 817-773-0338 during the week. Please feel free to contact me if you have any questions.

You may retain this cover letter which explains your participation and how the information obtained will be used. If you wish a copy of the results of the study, please sign the separate form included for this purpose.

Sincerely,

Cindy Jones, M.S.N., R.N.C.

APPENDIX H

Demographic Data Sheet

DEMOGRAPHIC DATA SHEET

1. AGE:

2. SEX: 1. FEMALE 2. MALE

3. MARITAL STATUS: 1. SINGLE, NEVER MARRIED
   2. MARRIED
   3. DIVORCED
   4. SEPARATED
   5. WIDOWED

4. EDUCATIONAL LEVEL:

   WHAT IS THE HIGHEST GRADE OF REGULAR SCHOOL THAT YOU COMPLETED? (CIRCLE ONE)

GRADE SCHOOL								HIGH SCHOOL			
1	2	3	4	5	6	7	8	9	10	11	12

COLLEGE				GRADUATE SCHOOL					
13	14	15	16	17	18	19	20	21	22

5. ETHNIC BACKGROUND

   1. ASIAN
   2. BLACK
   3. CAUCASIAN
   4. HISPANIC
   5. NATIVE AMERICAN
   6. OTHER (SPECIFY)

6. TOTAL YEARLY FAMILY INCOME: _____

APPENDIX I

Permission To Use Health-Promoting Lifestyle Profile

Northern Illinois University
DeKalb, Illinois 60115-2854

Health Promotion Research Program
Social Science Research Institute
Ambulatory Cancer Clients Project
Cardiac Rehabilitation Project
Corporate Project
Older Adults Project
(815) 753-9670

February 16, 1990

Cindy Jones, M.S.N., R.N.C
3713 Redbud Road
Temple, Texas 76502

Dear Ms. Jones:

You have permission to use the 48-item Health-Promoting Lifestyle Profile in your study of the relationship among social support, perceived health status, health-related hardiness and health-promoting lifestyle among non-institutionalized well elderly. You may have copies made from the form that is enclosed. Content should not be altered in any way and the copyright/ permission statement at the end must be reproduced.

There is no charge for approved research use, but I would appreciate receiving a complete report of your study for our files. We are particularly interested in information about scores (range, mean and standard deviation) on the Lifestyle Profile, reliability coefficients, and correlations with other measured variables. If this study is to be your dissertation, it would be most helpful if you would be willing to share a copy when completed.

Best wishes with your study.

Sincerely,

Susan N. Walker

Susan Noble Walker, Ed.D., R.N.
Associate Professor and
Co-Director, Health Promotion Research Program

Encl.

APPENDIX J

Permission To Use Norbeck's Social Support Questionnaire

APPENDIX A

Request Form

I request permission to copy the Norbeck Social Support Questionnaire (NSSQ) for use in research in a study entitled: RELATIONSHIP OF PARTICIPATION IN HEALTH PROMOTION BEHAVIORS TO HEALTH-RELATED HARDINESS AND OTHER SELECTED FACTORS IN OLDER ADULTS

Cindy Jones RNC, MSN
(Signature)

6-11-90
(Date)

Position and Full Address of Investigator: Cindy Jones, R.N.C., M.S.N., Coordinator
Texas Department of Health, PHR-1

Mailing Address: 3713 Redbud Road
Temple, Texas 76502

Permission is hereby granted to copy the NSSQ for use in the research described above.

Jane S. Norbeck
Jane S. Norbeck

June 19, 1990
(Date)

Please send *two signed* copies of this form to:

Jane S. Norbeck, D.N.Sc.
Department of Mental Health and Community Nursing
University of California, San Francisco
N505-Y
San Francisco, California 94143

APPENDIX K

Permission To Use Health-Related Hardiness Scale

UNIVERSITY of PENNSYLVANIA

School of Nursing
Nursing Education Building
Philadelphia, PA 19104-6096
215-898-8281

Dear Colleague:

Enclosed is the Health Related Hardiness Scale (HRHS) and the scoring instructions you requested. I have also included a summary of the latest psychometric information. Please be advised that while this is the current version of the HRHS, there will likely be future revisions based on the factor analysis in progress.

Reliabilities (alpha coefficients) for the total HRHS are .86 and .78 for control, .82 for commitment and .76 for challenge. Test retest reliability (n=30) was .9 for two weeks and .8 for three months. Content validity was established by a panel of experts (N=5) and the HRHS was judged to meet the requirements of readability, clarity and meaning. The same panel was 100% in agreement that the HRHS was more appropriate than the original hardiness measure for health related research. Discriminate validity was supported in a study of relatively healthy adults (N=244), where the HRHS was found to be a better predictor of health status, utilization of social support, and engagement in health promotion activities than the original hardiness measure. The current 40 item HRHS was revised from an earlier 42 item scale based on three factors. Another factor analysis of 474 adults with chronic ilnesses is in progress.

Good luck with your research and I look forward to hearing from you.

Sincerely,

Susan Pollock

Susan E. Pollock, PhD, RN
Robert Wood Johnson
Clinical Nurse Scholar
University of Pennsylvania
School of Nursing