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Hardiness and Adaptation to Hypertension

Marcia L. Smit
Grand Valley State University

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HARDINESS AND ADAPTATION TO HYPERTENSION

By

Marcia L. Smit

A THESIS

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Thesis Committee Members:

Patricia Underwood, Ph.D., R.N.
(chair)

Katherine Kim, Ph.D., R.N.

Donald Paszek, Ph.D.

ABSTRACT

HARDINESS AND ADAPTATION TO HYPERTENSION

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Hardiness, a personality characteristic that is purposed to mediate the stress response and reduce the likelihood of illness, was studied in the context of adaptation to chronic disease. A descriptive correlational design was used to determine whether a positive relationship exists between the presence of hardiness and psychosocial adaptation to hypertension. The sample consisted of 50 individuals 60 years old or older. Data was analyzed using the product moment correlation coefficient, Spearman's Rho, and multiple regression. A moderately weak correlation ($r = .39$, $df = 48$, $p = .003$) between hardiness and adaptation was found. Other significant relationships identified included those between hardiness and role function, hardiness and social support, control and role function, commitment and social support, commitment and intrapsychic functioning, and between commitment/challenge and social support. Nursing implications, with emphasis on gerontology, are discussed.

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CHAPTER 1

INTRODUCTION

Adaptation to various stressors is a part of daily life. One might expect that, with the onset of the "golden years", the incidence of stress and the demand to adapt would decrease. This, however, does not reflect reality for most older adults; in fact, they are required to confront a variety of stressors which have accumulated with the years in addition to those unique to the aging process.

Losses, such as the loss of spouse, family, friends, home, and/or independence occur with depressing predictability. Changes in family dynamics and role changes result directly from these losses or secondary to changes of aging. The incidence of chronic disease increases with age and forces the person to adapt to the loss of health as well as to the changes brought about by the aging process. The later years require the use of coping mechanisms developed throughout a lifetime in order to effectively adapt to these changes.

Selye (1956) pioneered the study of physiological adaptation to stress; his General Adaptation Syndrome is a classic work. Subsequently, interest in the psychological aspects of the stress response developed

and Lazarus (1966) provided the foundation for this research. The concept of hardiness was first introduced by psychologist Kobasa in 1979. She believed that the existing studies of stress tended to portray individuals as passive victims of their environment rather than as active participants. She proposed that "persons who experience high degrees of stress without falling ill have a personality structure differentiating them from persons who become sick under stress" (1979, p. 3).

Pollock (1984) found implications for nursing in Kobasa's work and suggested that ". . . perhaps concern should not be focused on how stress leads to illness but on why some persons can maintain health even in stressful situations. A clue to the solution may be the hardiness characteristic that Kobasa identified" (p. 8).

Nursing has defined its major concern as human responses to actual and potential health problems (American Nurses Association, 1980). Lambert and Lambert assert that:

hardiness is directly relevant to nursing practice because it may assist in the determination of (a) who might be more inclined to experience illness when encountering stressful life events and (b) who might be in need of stress-reduction interventions so as not to succumb to stress-related illness (1987, p. 92).

Swanson, Cronin-Stubbs, and Sheldon (1989) state that nurses may find that the hardy person assumes more initiative in program planning and requires fewer interventions to activate coping mechanisms but may be viewed as senile or difficult rather than compliant.

Nurses need to be able to recognize and support helpful coping strategies in order to be effective in helping the patient to deal with chronic disease (Miller, 1983). Consideration of the personality characteristic of hardiness may prove valuable to nursing in assessment and in providing care. In fact, Pollock maintains that ". . . once nurse scientists understand the effects of hardiness and how it promotes health and adaptation in both well individuals and those with health problems, the implications will be limitless" (1989a, p. 53).

The aging of the American population will challenge our health care system in many ways. A Profile of Older Americans: 1991 provides some pertinent statistics. In 1900, 4.1% of Americans were over 65 and this increased to 12.6% in 1990. In addition, the older population is getting older. Compared to 1900, in 1990 the 65 to 74 age group was eight times larger, the 75 to 84 age group was 13 times larger and the over-85 age group was 24 times larger. Persons 65 and older are expected to represent 13% of the population by the year 2000 and 21.8% in 2030 (American Association of Retired Persons, & Administration on Aging, 1991). Most of these older

people will have one chronic disease and many will have multiple conditions.

When one considers the number of elderly and the number of chronic diseases that are likely to occur, the implications for nursing are clear. If nurses can identify and foster abilities which enable a person to better adapt to chronic disease and other stressors, the quality of these older lives will be enhanced. This study, which partially replicated one of Pollock's works (1986), evaluated older adults in an effort to determine whether those individuals high in hardiness adapted more effectively to a chronic disease (essential hypertension) than did those who have lower scores on the hardiness scale.

CHAPTER 2

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

Review of the Literature

The early hardiness research took place in the arena of psychology and compared the frequency of illness in hardy and nonhardy persons under stress. Recent applications to the field of nursing have focused on hardiness as it affects adaptation to an existing disease. Hardiness in the elderly has received little attention.

Kobasa began her hardiness research in the mid 1970's. She proposed the existence of a personality style of stress resistance which she called hardiness and investigated whether this hardiness characteristic buffers or facilitates coping with life events (Kobasa, 1982).

Kobasa's initial study (1979) used a retrospective design to evaluate stressed but healthy upper and middle level executives from a large corporation. She hypothesized that hardy individuals would be less likely to fall ill when experiencing stress. She described the hardy person as possessing three general characteristics:

- (a) the belief that they can control or influence the events of their experience,
- (b) an ability to

feel deeply involved in or committed to the activities of their lives, and (c) the anticipation of change as an exciting challenge to further development (p. 3).

Kobasa used a slightly modified, pilot-tested version of the Schedule of Life Events and the Social Readjustment Rating Scale (Holmes & Rahe, 1967) to measure stress. Illness items were taken from the Seriousness of Illness Survey (Wyler, Masuda, & Holmes, 1968). A composite questionnaire made up of all or parts of four standardized and two newly constructed instruments was designed to test for the presence of the hypothesized personality component, hardiness. She found that the high stress/low illness executives scored higher on the hardiness scale than did the high stress/high illness group.

A subsequent prospective study (Kobasa, Maddi, & Kahn, 1982) found support for the hypothesis that hardiness "functions to decrease the effects of stressful life events in producing illness symptoms" (p. 168). Hardiness has also been examined along with other variables, such as Type A behavior (Kobasa, Maddi, & Zola, 1983), exercise (Kobasa, Maddi, & Puccetti, 1982), and perceived social support (Kobasa & Puccetti, 1983). In each of these studies, the role of hardiness in reducing illness was supported. All of these studies were limited by the sample characteristics (predominately male, white, college-educated, and in managerial

positions) as well as by the use of a new instrument to measure hardiness.

Pollock (1989a) believed that hardiness had relevance to the nursing profession. She devised a model to explain the complexity of human adaptation from a nursing prospective and modified Kobasa's Hardiness Scale, which had been used only with well individuals, to develop the Health Related Hardiness Scale (HRHS) to measure hardiness in the chronically ill adult.

Pollock (1986) studied adaptation to chronic disease with 60 adults diagnosed with diabetes mellitus, essential hypertension, or rheumatoid arthritis. She used the Psychosocial Adjustment to Illness Survey (PAIS) (Derogatis, 1983) to measure psychosocial adaptation and the HRHS to measure hardiness. She designed disease-specific instruments to measure physiological adaptation. Significant relationships were found between psychosocial adaptation and hardiness for the total group ($r = .42, p < .01$). Hardiness was significantly related to physiological adaptation ($r = .43, p < .05$) and to psychosocial adaptation ($r = .62, p < .01$) for the subjects with diabetes but not for the group with rheumatoid arthritis. In the hypertensive group, hardiness was significantly related to physiological adaptation ($r = .39, p < .05$), and approached significance in psychosocial adaptation ($r = .36, p < .06$). Although this study involved both males and females, in contrast

to Kobasa's work with male executives, the oldest participant was 55 years old. There were only 20 individuals in each diagnostic category, also limiting generalizability.

In a recent study of patients with multiple sclerosis, hypertension, or rheumatoid arthritis (Pollock, Christian, & Sands, 1990), no differences were found between groups in psychological adaptation even though physiological adaptation was significantly different, suggesting that "although each chronic illness has disease-specific physiological changes, the nature of the psychological adaptation process is similiar" (p. 303). Furthermore, "the hardiness characteristic was the only major variable that related to both physiologic and psychological adaptation" (p. 304).

McNeil, Kozma, Stones, and Hannah (1986) were the first to discuss the application of the hardiness characteristic to gerontology. They concluded that Kobasa and Maddi's previously unpublished shortened version of the hardiness scale was appropriate for use with older adults. They found support for hardiness as a trait and found hardiness to be associated with happiness and low anxiety. Although the sample consisted of people over 50 years of age, it included only healthy, active, white-collar workers, all of whom were male. No other studies of hardiness in the older population have been found.

Limitations of the hardiness research are noted by Hull, Van Treuren, and Virnelli (1987). They point out the need for further psychometric testing of the hardiness scales, consideration of the question of whether hardiness is one phenomenon or three (commitment, control, and challenge), and whether hardiness directly affects health or buffers the effects of stressful life events. Wagnild and Young (1991) also question whether hardiness is a unitary construct and ask if other components besides commitment, control and challenge constitute hardiness.

The premise that a personality characteristic plays a role in adaptation has many implications. There has been little research regarding hardiness in the elderly and, in view of the fact that the need to adapt to chronic disease is a "given" for most older adults, this deserves further study.

Conceptual Framework

The conceptual framework used for this study is based on Pollock's work. Although support has been found for both the direct and indirect effects of hardiness on adaptation, this study focused only on the direct effects. Pollock's health-related hardiness concept, a modification of Kobasa's work, was used since it is more appropriate to nursing research. Adaptation was limited to the psychosocial domain.

Pollock found that the relevance of the hardiness research to the nursing profession was limited "due to

theoretical concerns about the relationship between hardiness and health, lack of empirical support for the effect of hardiness on adaptation to actual or potential health problems, and unsolved measurement problems" (Pollock, 1989a, p. 55). In order to facilitate the application of the hardiness characteristic to actual or potential health problems, Pollock proposed a health-related hardiness concept, and included more specific theoretical and operational definitions that can be used to investigate the effects of hardiness (Pollock, 1989a, p. 55):

health-related hardiness characteristic: the personality difference that affects an individual's adaptation to actual or potential health problems.

control: use of ego resources to appraise, interpret, and respond to health stressors.

commitment: appraisal and coping (which) leads to involvement in health-related activities appropriate for dealing with health stressors.

challenge: reappraisal of health stressors as potentially beneficial.

In other words, control is the belief that one has the power to influence one's health and illness, commitment is the willingness to do whatever is necessary to accomplish this, and challenge is the belief that the demands of preserving health and/or controlling illness presents an opportunity for a beneficial or

rewarding outcome.

Hardiness may affect adaptation to chronic disease both directly and indirectly (Figure 1). However, this study was limited to the direct effect of hardiness and its components of control, commitment, and challenge on adaptation to a specific disease, hypertension.

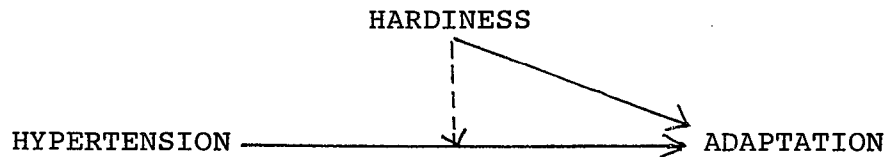


Figure 1. Direct and indirect effects of hardiness.

The direct effects of hardiness are presented in the Adaptation to Chronic Illness Model which, according to Pollock, incorporates concepts from Selye, Helson, Lazarus, and Roy (Pollock, 1986). This model portrays adaptation as a state which promotes the integrity of the person, and depends upon the effects of focal, contextual, and residual stimuli. Pollock conceptualized the focal stimulus as the chronic disease, the contextual stimuli as selected demographics, and the residual stimulus as the hardiness characteristic and its components of control, commitment, and challenge.

Pollock's more recent works support the indirect effects of hardiness on adaptation to chronic illness.

Hardiness may influence the person's perception of the chronic illness and the selection of coping strategies and social resources. It may also motivate an individual to make life-style changes that have a positive impact on health (Pollock, 1989a).

Adaptation to chronic disease is a complex matter. It is an active process whereby the organism adjusts itself to its environment and may involve behaviors in the physiological, psychological, and/or social domains. The level of adaptation is determined by the type and strength of the stressor and by the extent to which internal and external factors mediate the effect (Pollock, 1989a).

Critical to the process is the person's appraisal of the stressor; it may be viewed as positive, benign, or negative in its significance. Coping responses are cognitive and/or behavioral efforts to manage the situation when the stressor is viewed as negative. They may take the form of problem-focused responses which attempt to change the situation, perhaps by changing one's behavior, or of emotion-focused responses, such as withdrawal or denial, which decrease emotional distress (McNett, 1989).

This study examined the degree of a person's psychosocial adaptation to a medical illness. Adaptation was measured in composite domains of role function, social support, and intrapsychic distress. These domains were

conceptualized as follows:

role function: an individual's behavior in the domains of vocational environment (the ability to do one's chosen work or hobbies) and domestic environment (relationships and communication with the immediate family and neighbors as well as the financial impact of the illness).

social support: an individual's behavior in the domains of extended family relationships (communication, interactions, and dependency) and social environment (individual, family, and social leisure interest and participation).

intrapsychic functioning: the degree of psychological distress experienced as anxiety, depression, hostility, guilt, worry, low self-esteem, and body image problems.

Purpose and Hypothesis

The purpose of this study was to assess the older hypertensive adult for the presence of hardiness and to determine whether those individuals high in hardiness adapt more effectively to hypertension than do those low in hardiness. The following hypothesis was proposed:

Among persons who have a diagnosis of essential hypertension, those who score higher on the hardiness scale will exhibit more psychosocial adaptive behavior.

CHAPTER 3
METHODOLOGY

Design

A descriptive correlational design was used to determine whether a positive relationship existed between the presence of hardiness and effective adaptation to hypertension. Extraneous variables such as education, age, gender, the presence of other chronic diseases, the perception of available social support, and numerous psychological variables may also affect the level of adaptation. It was assumed that adaptation may be more dependent upon one or more individual components of hardiness rather than upon hardiness as a unitary phenomenon. However, since there are few studies using hardiness as a variable to explain adaptive responses to major health problems (Pollock, 1989b), and none have been found using an older adult sample, the information gained from this study will add to current knowledge and may be useful for future research.

Sample

A convenience sample of 50 residents of senior citizen apartment complexes in a county of southwestern Michigan was recruited. Criteria for selection included:

1. The ability to read and speak English
2. Age 60 or older
3. Presence of adult-onset essential hypertension for at least a year
4. Self-reported vision adequate to read a newspaper
5. Self-reported hearing adequate to understand and communicate in a group setting

Procedure

Prior to proceeding with this study, approval was obtained from the Grand Valley State University Human Subjects Review Committee. Permission to collect data on the premises was obtained from managers of the senior residences and arrangements made to inform the residents about the study.

One to two weeks prior to the data collection, the researcher met with residents and informed them about the nature and purpose of the study, criteria for participation, what participation would involve, and the date, time, and place of the data collection. Potential participants were told that they would be asked to complete two questionnaires, each of which would take about 20 to 30 minutes. They were informed that the questionnaires would not be a test of how much they knew about hypertension, and that there were no right or wrong answers; rather that the questions would focus on how they view their health and the effect of illness on their lives. They were assured that their answers would be

confidential and that they could withdraw from the study at any time.

The data collection occurred in the meeting room of each residence between the hours of 9 a.m. and noon when older adults are more likely to be rested and alert. General instructions were given and an opportunity provided to ask questions. The consent forms (Appendix A) were distributed, read, and explained as needed before they were signed; they were collected separately so that no names were attached to the questionnaires. Demographic data sheets were then completed. Specific instructions were given prior to proceeding with the HRHS (Appendix B) and with the PAIS (Appendix D). The researcher remained in the room to answer questions.

Potential risks to subjects were few. The possibility of fatigue was minimized by permitting participants to proceed at their own pace and by holding the meeting in the morning. Stress was reduced by informing them that there were no right or wrong answers to the questions, that their answers would be completely confidential, by the assurance of the freedom to discontinue at any time, and by providing legible instruments and a quiet environment.

Instruments

Pollock's Health-Related Hardiness Scale (HRHS) was used to measure the hardiness characteristic and the Psychosocial Adaptation to Illness Survey (PAIS)

was used to measure adaptation to hypertension. These instruments were selected because they had been used by Pollock (1986) in the study upon which this one is based. A demographic data questionnaire was designed for use in this study by the researcher.

Health-Related Hardiness Scale. The current form of this instrument (Appendix C) contains 34 items rated on a six-point scale from strongly disagree (1) to strongly agree (6). Hardiness was measured as a total of the components of control (14 items), commitment (7 items), and challenge (13 items). Pollock subsequently combined the components of commitment and challenge (20 items) as one subscale while retaining the control component (14 items). Pollock (personal communication, October 11, 1990) explained that principal components analysis with chronically ill subjects had resulted in commitment and challenge items loading together, suggesting "that they are more closely related and not discrete dimensions in a health-specific context". In other words, hardy individuals may be committed to maintaining their health and therefore challenged by a health stressor. In addition to examining total hardiness, this study examined the three dimensions separately as well as the combined commitment/challenge dimension.

In a pilot study, subjects were given the new instrument and Kobasa's (1979) Hardiness scale.

Convergent validity was supported by the findings of a statistically significant but moderate correlation of .54 between the two scales, supporting the idea that the HRHS measures hardiness but is sufficiently different from Kobasa's scale" (Pollock & Duffy, 1990, p. 220). The HRHS was found to be "positively correlated with perceived health status, $r = .28$, $p < .05$, engagement in health promotion activities $r = .23$, $p < .05$, and use of social resources $r = .45$, $p < .05$ " (Pollock, 1989a, p.59).

Cronbach's alpha for the 34 item scale demonstrated high internal consistency with a standardized alpha coefficient of .91. The challenge/commitment and control subscales each had an alpha score of .87, while the challenge subscale alone was .81 and the commitment subscale was .74. Test-retest reliability was .76 for the total scale, .74 for the Challenge/Commitment dimension, and .78 for the Control dimension (Pollock & Duffy, 1990).

Psychosocial Adjustment to Illness Survey. This instrument was designed to measure adjustment in seven domains: (a) health care orientation, (b) vocational environment, (c) domestic environment, (d) sexual relationships, (e) extended family relationships, (f) social environment, and (f) psychological distress. The domain scores are useful in that they "contribute a profile of areas of relative asset and liability"

(Derogatis & Derogatis, 1990, p. 33). Each item on the PAIS is responded to on a four-point (0-3) scale.

Swassing (1989), reporting on the PAIS, stated that internal consistency reliability studies for the total scale resulted in reliability coefficients ranging from .62 to .93 and that factor analysis identified seven dimensions accounting for 63% of the variance, with little correlation among dimensions but a greater correlation with total scores. Browne et al. (1988) stated that recent work has illustrated concurrent validity with clinical judgments.

Pollock reconceptualized adaptation to include the components of role function, social support, and intrapsychic functioning. She used the vocational (6 items) and domestic environment (8 items) domains to measure role function, the extended family relationships (5 items) and social environment (6 items) to measure social support, and the psychological distress domain (7 items) to measure intrapsychic function.

The vocational domain of the PAIS contains questions about the ability to do ones job or school work. Because the subjects of this study were elderly, the wording was changed slightly to be more appropriate for this age group. For example, "your job" was changed to "the work you want to do" and a question about time lost from work or school was changed to an inability to continue normal routines.

Demographic Data. Relevant demographic data were collected by means of a self-report questionnaire (Appendix F). Data collected included year of birth, gender, marital status, race, education, living arrangements, and yearly income. Participants were asked to rate their present health as excellent, good, fair, or poor, and to indicate whether they had experienced any change in health for better or worse in the past six months. Additional questions included how long they had had hypertension, and whether they also had cancer, heart disease, lung disease, severe arthritis, or other diseases.

CHAPTER 4

RESULTS AND DATA ANALYSIS

The hypothesis for this study was that, among persons who have hypertension, the stronger the hardiness characteristic the more psychosocial adaptive behavior they would exhibit. The independent variable was the degree of hardiness and the dependent variable was psychosocial adaptation. Both variables were scored on a Likert-type scale. Individual items on each scale were measured at an ordinal level. An interval level of measurement was assumed for the total score for each instrument.

The product moment correlation coefficient (Pearson's r) was used to evaluate the relationship between the total scores and sub-scale scores on each instrument. Spearman's Rho was used to measure the relationships with the demographic data measured at the ordinal level. Multiple regression was used to examine the unique contributions of the hardiness subscales to adaptation.

Subjects

The sample consisted of 50 Caucasian adults between the ages of 63 and 92 ($M = 78.5$ years, $SD = 6.3$) who had been diagnosed with essential hypertension for one to 44 years ($M = 15.27$ years, $SD = 11.52$). The majority

were female (88%) and widowed (66%). Only 20% were married; the balance were either single or divorced. There was a broad range of education (see Table 1); most had either completed grade school (32%) or high school (32%).

Table 1. Educational Levels of Sample		
Educational Level	n	%
some grade school	3	6.0
completed 8th grade	16	32.0
some high school	7	14.0
completed high school	16	32.0
some college	7	14.0
completed college	1	2.0

All were residents of a senior citizen apartment complex and lived in their apartment alone (80%) or with their spouse. Incomes were low, with 78% receiving \$10,000 or less annually (see Table 2).

Most subjects felt their present health was good (46%) or fair (42%); only 10% believed themselves to be in poor health, while health was rated as excellent by one subject. The majority (62%) did not believe their health had changed in the previous six months while the balance was fairly evenly divided between those who felt their health had improved or worsened. A number of diseases concomitant to hypertension were experienced including heart disease (32%), severe arthritis (18%), lung disease (8%), cancer (6%), and "other" (8%).

Hypertension was reportedly the only health problem for 24%.

Table 2. Income Levels of Subjects

Income	n	%
\$0.0 to \$5,000	9	18.0
\$5,001 to \$10,000	30	60.0
\$10,001 to \$15,000	4	8.0
\$15,001 to \$20,000	2	4.0
\$20,001 to \$25,000	1	2.0
\$25,000 and over	0	0.0
missing data	4	8.0

Data Analysis

Demographic data and scores from the PAIS and HRHS were coded. Analysis was done using the SPSS/PC+. Before the data were analyzed, it was important to establish the reliability of the instruments in this study for two reasons. First, reliabilities established in previous studies used much younger samples. Secondly, several of the PAIS items in the vocational environment domain were rephrased slightly to make them more appropriate to this retired population. Coefficient alpha reliabilities computed for the total PAIS ($\alpha = .93$) and for the total HRHS ($\alpha = .86$) indicate good internal consistency. This compares favorably with Pollock's (1986) results for the total PAIS ($\alpha = .86$) and for the HRHS ($\alpha = .81$).

Means and standard deviations were computed from raw scores for both instruments. The possible range for the PAIS is 0 to 62 with lower scores indicating greater adaptation. The range for this sample was 6

to 61 with a mean of 20.36 (SD = 15.10). The possible range for the HRHS is 34 to 204 with higher scores indicating higher levels of hardiness; scores obtained ranged from 99 to 199 (M = 148.04, SD = 23.52).

Because low scores on the PAIS indicated higher adaptation and high scores on the HRHS indicated higher levels of hardiness, analysis would have resulted in negative correlations. Since this may have been confusing in reporting the results, the PAIS scores were reversed to produce positive correlations.

Pearson correlations were computed to test the hypothesis that individuals higher in hardiness would adapt more effectively to a chronic disease (hypertension) than do those low in hardiness. There was a moderately weak correlation ($r = .39$, $df = 48$, $p = .003$) between hardiness and adaptation. Regression analysis indicated that 15% of the variance in adaptation is explained by hardiness. Therefore, the hypothesis was supported.

The total hardiness scores and the dimensions of control, commitment, challenge, and commitment/challenge were examined for the presence of significant relationships with the domains of adaptation, i.e. role function, social support, and intrapsychic function (see Table 3). Moderately weak correlations between hardiness and role function ($r = .37$, $df = 48$, $p = .004$) and between hardiness and social support ($r = .37$, $df = 48$, $p = .004$) were found. Control was found to be significantly related

to role function ($r = .37$, $df = 48$, $p = .005$). Commitment and social support ($r = .37$, $df = 48$, $p = .005$) and commitment and intrapsychic functioning ($r = .35$, $df = 48$, $p = .007$) also showed significant relationships. The combined subscale of commitment/challenge was significantly related to social support ($r = .39$, $df = 48$, $p = .029$).

Table 3. Pearson Correlations of Hardiness and Adaptation

ADAPTATION	HARDINESS				
	Total score	Control	Commitment	Challenge	Commitment/Challenge
Total score	.39**				
Role function	.37**	.37**	.33*	.28*	.32*
Social support	.37**	.31*	.37**	.33**	.39**
Intrapsychic function	.27*	.28*	.35**	.16	.27*

* $p < .05$ ** $p < .01$

Because hardiness was found to explain only 15% of the variance in adaptation, the demographic variables were examined to see if any of them contributed to an understanding of adaptive abilities. Analysis was limited by the homogeneity of the sample. However, a significant correlation ($Rho = .57$, $df = 48$, $p < .001$) was found between the subjects rating of their present health and adaptation. Present health was also found to be related to hardiness ($Rho = .41$, $df = 48$, $p = .003$).

A multiple regression analysis was performed to

determine whether any of the components of hardiness were predictive of adaptation. The results indicated that neither control, challenge, nor commitment made independent contributions to an understanding of adaptation at a significant level.

CHAPTER 5

DISCUSSION AND IMPLICATIONS

Discussion

Results of this study support the hypothesis that a significant relationship exists between hardiness and psychosocial adaptation. In particular, hardiness as a construct contributed significantly to the adaptive domains of role function and social support. Hardiness as a whole did not explain intrapsychic function, but commitment alone was significantly related to intrapsychic function. In Pollock's study of younger adults with chronic illnesses, she found that the relationship between hardiness and psychosocial adaptation only approached significance ($r = .36, p < .06$) for the hypertensive group of subjects (Pollock, 1986). Both studies found a correlation between hardiness and role function and between commitment and intrapsychic function. Neither study found age to be a significant factor. Pollock found sex and social status to be significantly correlated with both hardiness and adaptation.

Some of the difference in findings between this study and Pollock's (1986) may be explained by the differences in the characteristics of the samples. The size of the samples differed, with 50 hypertensive

subjects in this study and only 20 in Pollock's. This sample also was homogeneous with regard to race, gender, income, and living arrangements. While Pollock studied a population between the ages of 21 and 55, all subjects in this study were over the age of 63. Another difference was the length of time with the diagnosis of hypertension. Sixty-five percent of Pollock's subjects had been diagnosed for less than 10 years while the mean length of diagnosis for this sample was 15 years.

Although a significant relationship between hardiness and psychosocial adaptation was found, it was moderately weak. There are several possible explanations for this. Personality characteristics may not exert a great deal of influence on adaptation, or some personality factors may work more to influence a person's perception of adaptational demand while other beliefs may have a stronger effect over what they actually do. Hardiness may be a critical factor but it may not have been measured adequately. Adaptation may also have been inadequately measured. Finally, external factors may be more important than internal factors in adaptation.

An important issue is the hardiness construct and how it is measured. Wagnild and Young (1991) advocate for a more complete understanding of hardiness, including whether it is a unitary characteristic, whether it is three separate dimensions of control, commitment, and challenge, or whether it contains other components, as

yet unidentified. Pollock suggests that "coherence, self-efficacy, motivation, appraisal orientation, and optimism/pessimism" might also need to be included in the construct (1989a, p. 61). Lee (1983, p. 35) states that hardiness ". . . encompasses the idea of adaptation, resilience, resistance, determination, optimism, assertiveness, etc."

Hull, Van Treuren, and Virnelli (1987) maintain that hardiness is not a unitary phenomena and that only commitment and control have direct effects on health. However, Pollock and Duffy suggested that commitment and challenge may not be discrete, and that challenge may be somewhat redundant as measured:

commitment to adjusting to a health stressor (chronic illness) is also the challenge. Persons are challenged (rather than threatened) when confronted with a health stressor, which, in turn becomes a personal commitment. Hardy individuals dealing with a chronic health problem may not separate health into discrete categories but appraise the condition as a challenge because they are committed to maintaining their health (Pollock & Duffy, 1990, p. 221).

The HRHS is a relatively new instrument and, though found to be superior to Kobasa's Hardiness Scale for measuring hardiness in the chronically ill, may have deficiencies that further usage will identify. Wagnild

and Young allege that "the underlying assumptions of the HRHS appear to have been adopted without empirical grounding in the new population of chronically ill adults" (1991, p. 259). In addition, its use has not been reported in a study of chronically ill elderly.

Also at issue is whether hardiness affects the appraisal of the illness. If the illness is viewed as benign, adaptation may not be a problem. If it is viewed as negative, hardiness may enable the individual to activate problem-focused coping strategies, such as adherence to a prescribed regime. If this results, for example, in adequate control of the blood pressure, the threat of the illness may be lessened.

Limitations of the Study

This study was limited by the small, homogeneous, conveniently selected sample. Those who participated were primarily elderly, white, low income females. Homogeneity was also present in the living arrangements; all lived in senior apartment complexes. Nursing home residents, homeowners, and those living with family or friends were not represented. Subjects were selected from a geographical area which is predominately conservative in its politics and religion. These individuals may ascribe control of health to a Supreme Being rather than to personal control and this belief may have influenced their responses to particular items on the HRHS. In addition, hardy people may be more likely

to volunteer to participate in a study such as this because of their interest in and commitment to their health.

Another limitation is the chronic disease studied. Hypertension may not interfere as much with adaptation as other chronic diseases which cause more interference with a preferred life style because of the required medical regime or resulting physical disability. It is also possible that, generally speaking, an individual perceives himself to have more control over hypertension than some other illnesses.

The cumulative effect of the presence of additional chronic diseases may have affected the results. Seventy-six percent of the sample reported at least one coexisting disease and 32% reported two. This would be expected to increase the threat to health and it may not have been possible for participants to separate out how much of their problems were the result of the hypertension alone and how much were the result of their combined health problems.

The vocational domain of the PAIS is also an area of concern and may not be appropriate for an elderly population. Although an effort was made to make items in this domain relevant to retired individuals, the demands of the activities that comprise their daily work may have less impact on their adaptation than does the stress of the work place on a younger population.

Nursing Implications

Although the hypothesis of this study was accepted and a significant relationship between hardiness and psychosocial adaptation was found, the relationship was moderately weak. In order for the HRHS to be a useful assessment tool for nursing, the relationship needs to be stronger. However, if future studies support a stronger relationship, nurses and patients may benefit from the applications of this concept. Further testing and refinement of the tool may produce a very useful instrument.

The nursing process would be enriched by the application of hardiness. After assessing the level of hardiness, interventions could be selected which would enhance adaptation. For example, the patient who is low in hardiness may require additional nursing support in order to identify how control of his health and illness may be achieved, to foster his commitment to learning to live with a chronic disease, and to encourage the view that living with the disease is a challenge that can be met. Conversely, the hardy patient may require fewer interventions to activate effective coping mechanisms and may benefit from being given more initiative in program planning (Swanson, Cronin-Stubbs, & Sheldon, 1989). Some teaching methods may be more effective with hardy individuals than with the non-hardy (Lee, 1983).

Evaluation of the effectiveness of nursing

interventions might be more accurate if the nurse recognizes that the "non-compliant" or difficult patient may be a hardy person who is taking control of and is committed to his health and views his present situation as a challenge to be overcome.

Hardiness fits well with today's emphasis on health promotion and disease prevention. The development of hardiness in individuals may promote their use of self-care in order to prevent illness (Allred & Smith, 1989). It may, for example, encourage the use of stop-smoking, weight reduction, and exercise programs.

The elderly present a special challenge and opportunity. The dramatic increase in the elderly population, especially in the over-85 age group, will continue to have an impact on the health care field. Older people accounted for 33% of all hospital stays and 45% of all days of care in hospitals in 1989, and they also average more visits to physicians (American Association of Retired Persons & Administration on Aging, 1991). Today's health care climate, with limited dollars, proposed changes in the health care delivery system, and discussions of how to fairly ration health care, can be expected to have a major impact on this population.

It is a given that the aging individual will need to cope with failing health, many stressful life events, and losses of many kinds. An increased sense of control over one's health, illness, symptoms, and pain, a belief

in the adequacy of personal resources, and the knowledge that the course that aging takes is dependent to some degree upon how it is handled may help the elderly be active participants in health and health care, rather than passive victims to the years. Commitment may take the form of being actively involved in life, continuing tasks as able, determining to maintain a preferred life style and living arrangement, and following prescribed regimes.

If hardiness can be shown to influence adaptation to the process of aging and to the presence of chronic diseases, the implications for nursing would be exciting. Hardiness might result in the conviction that one's health is controlled by individual actions and in a commitment to maintaining and improving personal and societal health. The changes brought about by aging might be viewed as a challenge, not to be acquiesced to, but rather, as something to overcome. Nurses could assess for the presence of hardiness and use this information in intervention and evaluation.

Implications for Further Research

Hardiness merits further research. Tools to measure health-related hardiness would benefit from being strengthened and refined. If the HRHS were to be tested on enough people, it might be possible to state at what level on the scale hardiness begins. Replicated studies with large samples, and varying populations, ages,

genders, and states of wellness are needed. Studies are also indicated to determine if the assessed level of hardiness contributes to adaptation over time.

The concept of hardiness needs further clarification and development. Is hardiness one concept or three? What is the relationship between hardiness, locus of control, and powerlessness? What might be the role of the proposed components of hardiness such as endurance, strength, boldness, and power to control (Lee, 1983), and how are they the same as or differ from control, commitment, and challenge? Does hardiness have a direct impact upon health and adaptation or does it serve as a buffer and facilitator? Is hardiness a phenomenon present only in certain cultures? Can there be too much hardiness, which might be evidenced as excessive assertiveness and ignoring sound advice (Lee, 1983)? Does hardiness increase with age or with the experiences of coping with stressors (Pollock, 1989a)? How can nurses use hardiness to promote their own health and well-being as well as that of their clients?

Research is also needed to look at external variables that may influence adaptation. For example, how important is the availability of family support and community resources? Does lack of access to health care adversely affect adaptation?

The possibilities are exciting. Hardiness may represent only one factor in adapting to a chronic

disease, and it may do so directly and/or indirectly. It may mean that a hardy person is less likely to become ill when stressed and that the hardy person adapts more successfully to a chronic disease. It may influence the perception of and response to illness and health, facilitating the use of health promotions strategies and community resources. Further research will assist in developing systematic theory-based applications of hardiness (Bigbee, 1985). A theory-based practice will strengthened both the nursing profession and nursing practice.

APPENDICES

Appendix A

Information and Informed Consent

Appendix A

INFORMATION AND INFORMED CONSENT

The study in which you are being asked to participate is titled "Adaptation to Hypertension". The purpose of this study is to determine how people feel about their health and how they are dealing with high blood pressure.

If you agree to participate, you will be asked to complete two questionnaires, each of which will take 20 to 30 minutes. You will be able to proceed at your own pace. There are no right or wrong answers to the questions. This is not a test to find out how much you know about high blood pressure.

It is unlikely that you can be harmed in any way by participating in this study. You may decide to withdraw at any time, even after you begin to answer the questions. Answers will be confidential; your name will not be attached to individual questionnaires. Your answers will not be given to **anyone else** and any reports of the study will never identify you in any way.

This study will not benefit you personally but it may help nurses understand more about how people adjust to having high blood pressure.

This study is being conducted by Marcia Smit, a registered nurse who is a student in the Masters program at Grand Valley State University. If you have any questions about the study, you may contact her at any time at 786-0809.

If you wish to receive a copy of the results of this study, please place a check on the line below.

By signing this consent form, you are stating that you have read and understand the information presented above and that you consent, of your own free will, to participate in the study.

date _____

signature _____

witness _____

 PLEASE SEND ME A SUMMARY OF THE RESULTS

Appendix B

Instructions: HRHS

Appendix B

INSTRUCTIONS: HRHS

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. Under each statement is a scale which ranges from strongly disagree (1) to strongly agree (6). For each item, I would like you to circle the number that represents how much you agree or disagree with the statement. Please make sure that you answer every item and that you circle only one number per item.

Appendix C

Health Related Hardiness Scale

PLEASE NOTE

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Appendix F

Demographic Data Questionnaire

DEMOGRAPHIC DATA

2/17,18 YEAR OF BIRTH: _____

2/19 GENDER: 1. ___ female 2. ___ male

2/20 MARITAL STATUS:
1. ___ married 2. ___ widowed
3. ___ divorced 4. ___ separated
5. ___ single

2/21 RACE: 1. ___ white 2. ___ black
3. ___ Hispanic 4. ___ Asian
5. ___ other

2/22 EDUCATION: 1. ___ some grade school
2. ___ completed 8th grade
3. ___ some high school
4. ___ completed high school
5. ___ some college
6. ___ completed college

2/23 LIVING ARRANGEMENTS:

1. ___ alone
2. ___ with my spouse
3. ___ with a family member other than spouse
4. ___ with someone not related

2/24 YEARLY INCOME:

1. ___ less than \$5,000
2. ___ \$5,001 to \$10,000
3. ___ \$10,001 to \$15,000
4. ___ \$15,001 to \$20,000
5. ___ \$20,001 to \$25,000
6. ___ \$25,001 and over

2/25 GENERALLY SPEAKING, WOULD YOU DESCRIBE YOUR PRESENT HEALTH AS:

1. ___ excellent
2. ___ good
3. ___ fair
4. ___ poor

2/26 DURING THE PAST 6 MONTH, WOULD YOU DESCRIBE YOUR HEALTH AS:

1. ___ changed for the better
2. ___ the same
3. ___ changed for the worse

2/27/28 HOW MANY YEARS HAVE YOU HAD HIGH BLOOD PRESSURE: _____

2/29 PLEASE CHECK ANY OTHER DISEASES YOU HAVE:

1. ___ cancer
2. ___ heart disease
3. ___ lung disease
4. ___ severe arthritis
5. ___ other: _____

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