

HEALTH EMBODIMENT: THE RELATIONSHIP BETWEEN
SELF-CARE AGENCY AND HEALTH-PROMOTING
BEHAVIORS

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To the Provost of the Graduate School:

I am submitting herewith a dissertation written by Janice Dawn Unruh Davidson titled "Health Embodiment: The Relationship Between Self-Care Agency and Health-Promoting Behaviors." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Nursing.

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DEDICATION

To my parents, LaVurne James and Marsha Ruth Unruh,
who raised me to persevere.

ACKNOWLEDGMENTS

I wish to express my deepest appreciation to my husband, Craig, whose enduring love and support have carried me through these years of doctoral study and the births of our children. My gratitude is extended also to our family and friends: To my parents for enduring months of separation while I pursued my doctoral coursework; to my brother, Bradley Unruh, who assisted in my pilot study; to my father and his sister, Virginia Unruh Pauls, who both assisted in my data collection; to our friends, Craig and Kay Voigt, who spent hours helping to compile the questionnaires; and to my parents-in-law who helped in sending the follow-up mailings and in producing the drafts.

Appreciation is extended to Dr. Helen Bush, who served as my committee chairperson. Helen will long be remembered as both a mentor and a friend who had a profound impact on my life and provided guidance and support during preparation of my dissertation and throughout my doctoral program. I also appreciate the many contributions of my committee members: Dr. Peggy Drapo, Dr. Carol Gordon, Dr. Margie Johnson, and Dr. Michael Wiebe. They each had special significance to the study's completion and their acts of kindness and friendship will always be remembered.

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ABSTRACT

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The purpose of the study was to determine the predictive value of a health embodiment theorem through the analysis of the relationship of health-promoting behaviors to self-care agency. The nature of the problem was a comparison of self-care agency with health-promoting behaviors. Health embodiment was formalized through Gibbs' (1972) paradigm.

The holistic triangulated research design utilized a purposeful sampling technique to assess the criterion variable, predictor variables, and demographic data in 270 elderly Mennonite subjects. Self-care agency was operationalized by the Exercise of Self-Care Agency Scale (Kearney & Fleischer, 1979) as the criterion variable. Health-promoting behaviors were operationalized by the Health-Promoting Lifestyle Profile (Walker, Sechrist, & Pender, 1987) as the predictor variables.

Two pilot studies documented initial reliability and content validity of the instrumentation. Reliability for the total study sample ($N = 270$) was established at .89 for the Exercise Self-Care Agency Scale and .94 for the Health-Promoting Lifestyle Profile. A principal components factor analysis with orthogonal rotation by subscale demonstrated construct validity which indicated that the two tools measure different constructs.

Quantitative findings revealed that a statistical ($p < .01$) relationship exists between exercise of self-care agency and each of the health-promoting behaviors: self-actualization, health responsibility, exercise, nutrition, interpersonal support, and stress management. Further findings revealed a significant ($p < .01$) relationship between the criterion variable and the demographic variables of perceived health status and occupation. Additionally, the variables of self-actualization, exercise, marital status, and nutrition were found to be most predictive (69%) of the ability to perform self-care.

Qualitative findings were provided through content analysis which revealed that the Mennonite elderly subjects believed Christian lifestyle, good diet, and hard work most influenced individual health status. The qualitative

findings lend support to the quantitative findings of the study.

The results of the study support the premise that a significant relationship exists between health-promoting behavior and the exercise of self-care agency that could be called health embodiment. Moreover, the predictive value of the variables isolated suggests that a health embodiment equation is attainable through further exploration of the relationships identified.

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CHAPTER I

INTRODUCTION

The number of American citizens over 65 years of age has increased dramatically since the 19th century. Most newborns now survive well past the age of 65, while life expectancy is commonly known to be over 70 years of age. Gilbert (1986) reported that in 1985, 11% of the United States population was over 65 years of age while statisticians project that by the year 2030, the percentage of the United States population over 65 will have grown to an estimated 21%.

The exercise of self-care and health promotion are becoming increasingly important areas for nursing intervention as the greying of America occurs. The need for elderly Americans to exercise self-care in their health promotion is of concern not only to nursing, but to the general population of America. The increase in numbers of elderly American citizens, combined with concerns about quality of life and increasing longevity, contributes logically to a demand upon nursing and medical care, as well as social, economic, and political aspects of society. Moreover, a classic notion found in economic literature indicates that "the greatest current potential for

improving the health of the American people is to be found in what they do or do not do to and for themselves" (Fuchs, 1974, p. 17). Consequently, an understanding of those behaviors that contribute to health promotion is warranted. Additionally, the fostering of self-care agency in the elderly population is essential to nursing practice and thus, merits investigation. Therefore, the investigation of a model that could incorporate the notions of self-care agency and health-promoting behaviors of the elderly in America is especially important to nursing.

The notion of health embodiment was a creation of the researcher and combines the concepts of self-care agency and health-promoting behaviors. Health embodiment is not documented in nursing literature and was developed through formalization according to Gibbs' (1972) methodology of theory construction. The merging of the concepts of self-care agency and health-promoting behaviors into a model which the researcher describes as health embodiment is the foundation of this study.

Statement of Purpose

The purpose of the study was to determine the predictive value of a health embodiment theorem through the analysis of the relationship of health-promoting behaviors to self-care agency.

Problem Statement

The problem of the study encompassed the following:

1. Is there a significant relationship between self-care agency and health-promoting behaviors in elderly Mennonites?
2. Is self-care agency influenced by selected demographic variables of elderly Mennonites?

Significance of the Study

From a practice standpoint, health promotion is evidenced in the literature as significant to nursing (Gilbert, 1986; Kee, 1984). Further, the federal government, out of a growing concern for the health of America's elderly, has identified the health promotion of the elderly population as a goal worthy of achievement. In Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention, a specific, measurable, and achievable goal for America's elderly is presented:

To improve the health quality of life for older adults, and by 1990 to reduce the average annual number of days of restricted activity caused by acute and chronic conditions by 20%, to fewer than 30 days per year for persons aged 65 and older. (p. 71)

Research which endeavors to assist in the fulfillment of the goal of health promotion among the elderly is therefore warranted by nursing. Nursing interventions in the practice setting should be specifically directed at

enhancing the quality of life in the elderly through assessment of health-promoting behaviors. Walker, Sechrist, and Pender (1987) further elaborated upon this notion when they wrote of the need to understand and measure the components of a healthy lifestyle so that research and practice related to the achievement of a healthy lifestyle can progress.

The Level of Nursing Knowledge Regarding Self-Care

In establishing the significance of a study to nursing, one must first determine what the current level of nursing knowledge is regarding the concept in question. Therefore, a discussion of the development of nursing knowledge regarding self-care in the literature is warranted. Since the literature related to self-care is extensive, the researcher chose to delimit this section to the literature related to Orem's theory.

Dorothea Orem began developing the notion of self-care in 1956 with work towards a guide for curriculum development in practical nursing programs (Orem, 1959). The Nursing Development Conference Group (NDCG), a group of 11 nurses of varying backgrounds, continued the theory's development in 1967 in a cooperative effort to formalize self-care as a concept of nursing. The Nursing Development

Conference Group (1973) defined self-care agency and self-care as follows:

Self-care agency is the power of an individual to engage in the estimative and production operations essential for self-care. It is a complex, acquired quality that is described in terms of abilities and limitations. Self-care refers to actions based on culturally or scientifically derived practices by individuals (or their agents), directed to themselves or to conditions or objects in their environments in the interests of their own life, health, or well-being. (p. 86)

Subsequent to Orem's theory text, Nursing: Concepts of Practice (1971) and the Nursing Development Conference Group text, Concept Formalization in Nursing: Process and Product (1973), related work began to appear in the nursing literature. Orem has since worked to evolve the General Theory of Nursing with revisions of the original text in 1980 and 1985.

Regarding the related literature, in 1971, Allison became the first to publish research based on Orem's theory in relation to self-care in diabetic patients. Mammen, in 1973, wrote of the potential use of self-care in nursing in India. In 1974, Backscheider conducted a study that looked at self-care in diabetic patients in relation to the areas of physical, mental, motivational, and emotional aspects.

The year 1976 brought self-care research in outpatient clinics by Hallburg. Kinlein in 1977 wrote of an independent nursing practice and assisting clients in the

exercise of self-care agency. Smith, the same year, wrote of self-care as an "inevitable framework" for rehabilitative nursing. In 1978, Anna and others used self-care theory to examine the nursing process in nursing home residents. Also in 1978, Eichelberger and Denyes separately conducted unpublished research utilizing Orem's self-care theory in treatment of adolescents. Denyes' work eventually led to the development of a tool to measure self-care agency in adolescents. Further research in 1978 looked at self-care in the hospital setting, by Martin, who examined the relationship of self-care after surgical alterations. Another important study in 1978 was published by Eliopoulos who developed a model for the elderly which addressed the elderly individual's self-care agency.

The first tool to be published that measured an aspect of self-care was developed in 1979 by Kearney and Fleischer. This year also brought a proposal by Smith to use self-care theory as a metaparadigm for nursing research and theory development. Fenner also looked at self-care practices in 1979, in terms of nursing assistance. Rogers in 1979 looked at self-care in the hospital setting with patients dying of terminal illness.

In the year 1980, Joseph, Mullin, and Walborn published articles in Nursing Clinics of North America

about the application of self-care to patient care. Fitzgerald also wrote in 1980 of the use of self-care theory in an education program. Bromley wrote of self-care theory in stomal care teaching in 1980. Lantz, in 1981, conducted an unpublished research study which examined the correlation of self-care and self-actualization in elderly Texans.

Miller in 1982 conducted an assessment of self-care needs while Hoffart looked at self-care in renal transplant patients. Dodd also looked at self-care behaviors in 1982 of patients receiving chemotherapy.

In 1983, Ayers studied the relationship of self-care with locus of control. Fernsler also in this same year compared perceptions of self-care between nurses and cancer patients. Musci, also working with cancer patients, examined self-care between these patients and their families.

Harper, in 1984, published research regarding self-care among elderly, black, hypertensive patients. Davidson, during this same year, conducted unpublished research regarding self-care among an elderly Mennonite community from a historical perspective. Kubricht also looked at self-care in cancer patients in 1984.

In 1985, Michaels looked at self-care in patients with COPD, and Riehl-Sisca edited The Science and Art of Self-Care which examined the use of self-care in nursing education, clinical practice, and research. By 1986, research was being conducted in a variety of areas such as the examination of the relationship between social support and self-care by Eppard, a study on self-care in PMS patients by Kose, the effect of anxiety on self-care agency by Grass, and work by Weaver which examined perceived self-care agency and construct validity of Bickel and Hanson's scale developed in 1981 and 1982. To date, Orem's theory has generated more utilization and resulting literature than any other nursing theory (Meleis, 1985).

Developing the concept of self-care further, the Nursing Development Conference Group published a concept analysis of self-care agency (1979). In this analysis eight propositions specific to self-care agency were addressed. These propositions lend support to the hypotheses of this study. Successful support of the hypotheses not only in this research study, but in the many reviewed, can lend support to Orem's assumptions and to the General Theory of Nursing.

The Level of Nursing Knowledge Regarding
Health Promotion

Health promotion is a notion that has only recently appeared in the literature. Furthermore, with regard to the development of nursing knowledge about health promotion in the literature, the researcher chose to delimit this section to that literature which relates specifically to Pender's Model of Health Promotion (1987).

In Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention, health promotion was described as not focusing upon the ill or "at risk," but upon the healthy, and "tries to help (individuals) develop lifestyles that can maintain and enhance that state of well-being." Health promotion should, therefore, be differentiated from the notion of health protection and/or health prevention. Pender (1987) defines health promotion as a "self-actualizing tendency" (p. 59), which sets it apart from other notions of prevention and protection. Further, Pender's assumptions regarding her proposed model for health-promoting behavior are implicit in her work.

In terms of research on the specific notion of health promotion as used in this study, because the model is so new, little research has appeared in the literature to date. However, some important studies contributing to the notion of health-promoting behaviors have been conducted.

Primarily, a study conducted in 1981 by Christiansen was of merit, in which the author identified the determinants of health-promoting behavior. In 1983, Brown, Muhlenkamp, Fox, and Osborn explored the relationships among health beliefs, health values, and health promotion activity.

In terms of the model of health-promoting behavior, Pender first published her text, Health Promotion In Nursing Practice, which included her extensive work on health promotion and the development of the model, in 1982. In 1987, Walker, Sechrist, and Pender published a tool developed to measure health-promoting behaviors that was based on the model. Currently, Pender, Stromborg, Walker, and Sechrist are conducting a study to test the power of the model in exploring patterns of exercise and health-promoting lifestyles.

Justification Summary

The overviews provided indicate the development of the concepts to the current level of nursing knowledge regarding self-care agency and health-promoting behaviors. Upon initial examination of the literature, several gaps in the level of nursing knowledge regarding the concepts in question become apparent. The rationale for the present study is, therefore, based on the following identified gaps:

1. No study is documented which together tests Orem's Self-Care Theory with Pender's Model of Health Promotion.

2. No study is documented which has tested Pender's concept of health-promoting behaviors in the elderly.

3. No study is documented which has together tested the concepts of self-care agency and health-promoting behaviors within the Mennonite population.

4. No studies nor literature exist regarding the concept of health embodiment.

A further justification for the study can be found in related literature which addresses quality of life and increasing longevity in the aging American population. A difference in quality of life associated with increased longevity has been noted historically in the elderly Mennonite population within the United States. Davidson (1984) documented the self-care practices of elderly Mennonites in two Kansas communities during the time period of 1895-1920. In this study she found that the average age of the subjects at death was 80.8 years. In reference to this same time period, the American Association of Retired Persons (AARP) in 1986 reported that the average age of life expectancy for the general American population in 1900 was only 47.7 years. Moreover, Davidson (1984) interviewed elderly Mennonites in these same two communities whose

average age at the time of the interview was 86.2 years. According to the Profile of Older Americans, AARP reported in 1986 that the life expectancy for the general population born in 1985 was only 74.7 years, despite the increase of 27 years in longevity since the year 1900. An outcome of interest to the researcher, therefore, is to document not just an increase in longevity in the elderly, but also an increase in one's quality of life. Consequently, an examination of self-care agency and health-promoting behaviors that contribute to an increase in quality of life during increased longevity is in order.

Finally, an additional justification for the study exists in that the researcher has a vital interest in studying this population as the researcher is herself a member of the Mennonite population under examination. Thus, the significance of the study is supported by rationales ranging from personal interest to contributions to the existing body of nursing knowledge.

Conceptual Framework

Two models formed the basis for this study. The selected models were Orem's General Theory of Nursing (1985) and Pender's Model for Health-Promoting Behavior (1987). These two models incorporated the concepts of interest: self-care agency and health-promoting behaviors.

Self-care has been documented in the nursing literature since the 1950s. Previous to the third edition of her book, Orem's work was described as a self-care model (Fawcett, 1984; Fitzpatrick & Whall, 1983; Riehl & Roy, 1980). However, since 1985, Orem's work is described as a General Theory of Nursing which includes three related theories composed of self-care theory, self-care deficit theory, and nursing systems theory (Marriner, 1986; Meleis, 1985; Parse, 1987). The self-care deficit theory forms the fundamental basis of the General Theory of Nursing.

Orem's theory is predominantly developmental in nature and can be classified under the totality paradigm as defined by Parse (1987). The totality paradigm provides that "goals of nursing focus on health promotion, care and cure of the sick, and prevention of illness" (Parse, 1987, p. 32). Further, the totality paradigm promotes quantitative research processes and utilization within the nursing process (Parse, 1987).

The explicit theoretical assumptions that underlie Orem's General Theory of Nursing as defined by Orem (1985), are the following:

1. Human beings require continuous deliberate inputs to themselves and their environments in order to remain alive and function in accord with natural human endowments.

2. Human agency, the power to act deliberately, is exercised in the form of care of self and others identifying needs for and in making needed inputs.

3. Mature human beings experience privations in the form of limitations for action in care of self and others involving the making of life-sustaining and function-regulating inputs.

4. Human agency is exercised in discovering, developing, and transmitting to other ways and means to identify needs for and make inputs to self and others.

5. Groups of human beings with structured relationships cluster tasks and allocate responsibilities for providing care to group members who experience privations for making required deliberate input to self and others. (pp. 33-34)

Figure I depicts the main and auxiliary theories of Orem's General Theory of Nursing as they relate specifically to this study.

Pender's Health-Promotion Model was developed from social learning theory and is organized similarly to the Health Belief Model (Becker, 1977). Only during the last decade has the phenomenon of health promotion appeared in the nursing literature. Pender (1987) wrote that the motivation for health-promoting behaviors is desire for growth, expression of human potential, and quality of life. Further, the author described health-promoting behaviors as "an expression of the actualizing tendency" (Pender, 1987, p. 59). Pender's Health-Promotion Model could also, therefore, be classified under the totality paradigm as defined by Parse (1987). The focus on health promotion is the goal of nursing in Pender's model, and promotion of the

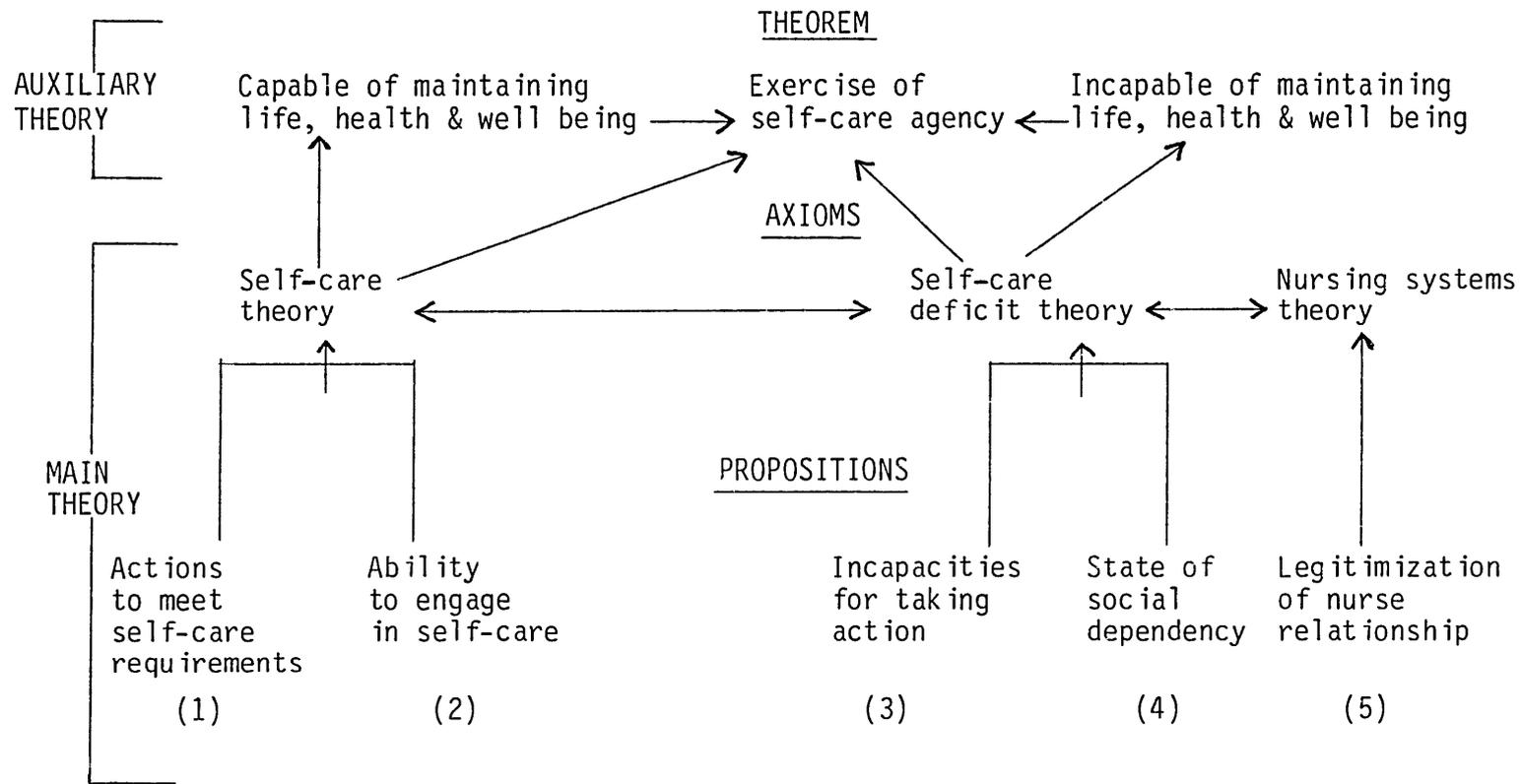


Figure I. Orem's General Theory of Nursing:
Demonstration of Main and Auxiliary Theories

quantitative research process and utilization within the nursing process is evidenced not only by Pender's research efforts as described in her text (1987), but also in the related tool that measures health-promoting behaviors (Walker et al., 1987).

The promotion of quality of life and longevity has been addressed by Dunn (1961), Travis (1977), and Ardell (1986). Work by Walker et al. (1987) has refined and supported those health-promoting behaviors that are relevant to Pender's model as self-actualization, health responsibility, exercise, nutrition, interpersonal support, and stress management. The implicit theoretical assumptions that underlie Pender's Health-Promotion Model as suggested by Hilton (1986) are the following:

1. Motivation is a necessary condition for action.
 2. Readiness to take action is related to perceived importance of health.
 3. Readiness to take action is related to perceived control of health.
 4. Readiness to take action is related to the desire for competence.
 5. Readiness to take action is related to self-awareness and self-esteem.
 6. Readiness to take action is related to personal definitions of health.
 7. Readiness to take action is related to perception of personal health status.
 8. Readiness to take action is related to perception of benefits of health-promotive behavior.
- (p. 59)

Merging of Concepts

The notion of health embodiment is a creation of the researcher's which combines the concepts of self-care agency and health-promoting behaviors. Figure II represents the conceptual synthesis of self-care agency and health-promoting behaviors within the schematic framework of a block conceptualization. The researcher chose to call this phenomenon health embodiment. Health embodiment is not documented in nursing literature and was further developed by the researcher through formalization according to Gibbs' (1972) methodology of theory construction. The structure selected was that of a type 1-2 theory construction paradigm as defined by Gibbs (1972).

Self-care agency can be defined as the ability of an individual to practice the activities of self-care (Orem, 1985). This idea was derived from the theory of self-care which seeks to describe and explain self-care agency and is composed of three contributing constructs: agent, self-care agent, and dependent-care agent. The idea of health-promoting behavior is defined as self-initiated actions and perceptions which serve to maintain or enhance one's level of wellness, self-actualization, and fulfillment (Pender, 1987). This idea was derived from the model of health-

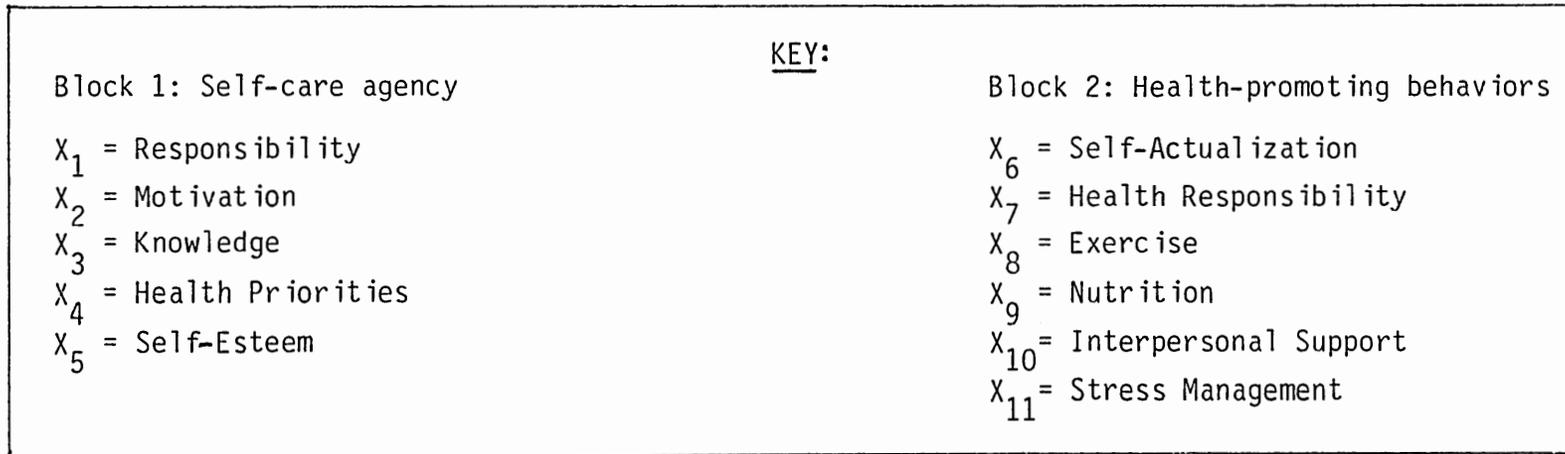
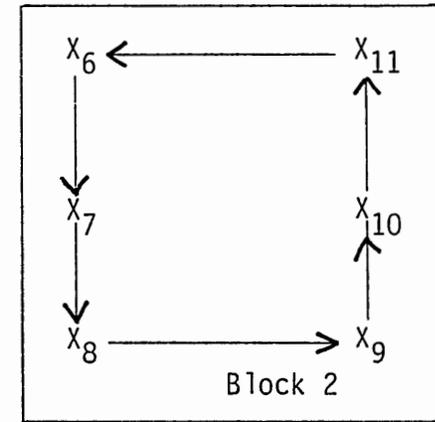
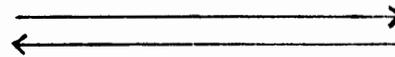
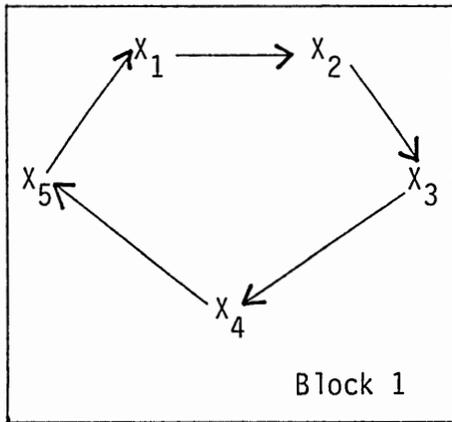
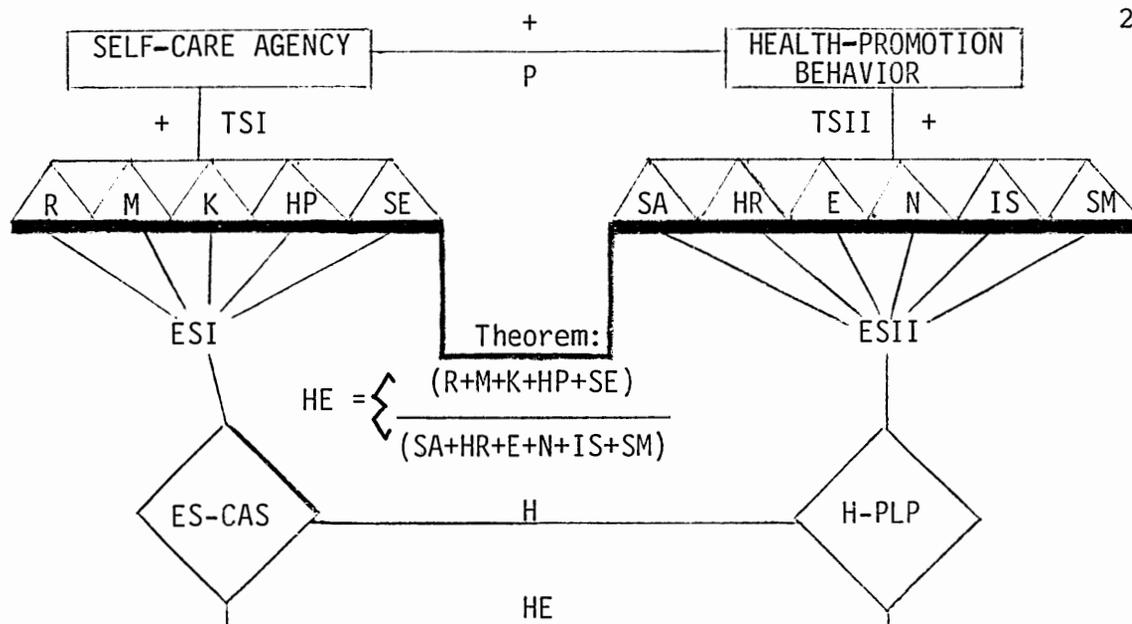


Figure II. Block Conceptualization of Health Embodiment

promoting behavior which seeks to explain life-style patterns or specific behaviors that are health-promoting.

The merging of these two conceptual perspectives is what the researcher describes as health embodiment. Another way to identify where health embodiment occurs is with a high correlation between self-care agency and health-promoting behaviors. Therefore health embodiment is defined globally by the researcher as that level which indicates legitimate self-care agency and results in health-promotion. The notion behind this embryonic definition is that not only does an individual have the ability to perform self-care, but one actually demonstrates lifestyle activities that are health-promoting in nature. Indeed, those who know what must be done to promote their health, actually implement and carry out those lifestyle changes.

Figure III provides a schematic of this formalization according to Gibbs (1972). The extrinsic part, which includes definitions of terms and specific substantive terms such as concepts and referentials, follows with the intrinsic part, or empirical assertions and constituent terms, subsequently provided.

**KEY:**

P = Proposition

TSI = Transformational Statement I

TSII = Transformational Statement II

ESI = Epistemic Statement I

ESII = Epistemic Statement II

H = Hypothesis

Referential Acronyms:

R = Responsibility

M = Motivation

K = Knowledge

HP = Health Priorities

SE = Self Esteem

SA = Self Actualization

HR = Health Responsibility

E = Exercise

N = Nutrition

IS = Interpersonal Support

SM = Stress Management

Referents Acronyms:

ES-CAS = Exercise of Self-Care Agency Scale

H-PLP = Health-Promoting Lifestyle Profile

Descriptive Statement Acronym:

HE = Health Embodiment

Figure III. Theory of Health Embodiment Using Gibbs' Paradigm

Substantive Terms

The concepts of self-care agency and health-promoting behaviors have been previously defined within the context of their respective models. The researcher intends that these definitions stand within the context of the model of health embodiment. The referentials of the model for self-care agency are R, M, K, HP, and SE. The definitions are as follows:

R is the acronym for the index of responsibility on the Exercise of Self-Care Agency Scale (Kearney & Fleischer, 1979). It is an attitude of responsibility for self which includes both active and passive roles.

M is the acronym for the index of motivation on the Exercise of Self-Care Agency Scale (Kearney & Fleischer, 1979). It is defined as the motivation one requires to care for self.

K is the acronym for the index of knowledge on the Exercise of Self-Care Agency Scale (Kearney & Fleischer, 1979). It is defined as the application of knowledge to self-care.

HP is the acronym for the index of health priorities on the Exercise of Self-Care Agency Scale (Kearney & Fleischer, 1979). It is developed out of the notion of

self-worth to the extent that one values one's health out of a sense of positive self-worth.

SE is the acronym for the index of self-esteem on the Exercise of Self-Care Agency Scale (Kearney & Fleischer, 1979). It is also developed out of the notion of self-worth to the extent that self-esteem is a positive (high) indicator of self-worth.

The referentials of the model for health-promoting behaviors are SA, HR, E, N, IS, and SM. The definitions are as follows:

SA is the acronym for the individual's subscale score on the Health-Promoting Lifestyle Profile (Walker et al., 1987). It refers to self-actualization and is developed out of the idea of one's sense of purpose in that purpose is considered to be fundamental to one's ability to work towards self-actualization.

HR is the acronym for the individual's subscale score on the Health-Promoting Lifestyle Profile (Walker et al., 1987). It refers to health responsibility and is developed out of both the notions of general health practices and use of the health-care system.

E is the acronym for the individual's subscale score on the Health-Promoting Lifestyle Profile (Walker et al.,

1987). It refers to exercise and is developed from the ideas of both physical and recreational activity.

N is the acronym for the individual's subscale score on the Health-Promoting Lifestyle Profile (Walker et al., 1987). It refers to nutrition and is developed from the ideas of both nutritious diet and weight control.

IS is the acronym for the individual's subscale score on the Health-Promoting Lifestyle Profile (Walker et al., 1987). It refers to interpersonal support and is developed from the notion of supportive relationships with others.

SM is the acronym for the individual's subscale score on the Health-Promoting Lifestyle Profile (Walker et al., 1987). It refers to stress management and is developed from both the ideas of stress management and the receipt of adequate sleep.

The unit term in this model of health embodiment is the individual. The individual is defined as any person, ill or healthy, who is interacting and responding to the environment.

Time units in this model are currently limited to T_0 . T_0 represents the point in time that physiological and psychological indications of the concepts occur.

Intrinsic Statements

Proposition 1: The greater the self-care agency, the greater the health-promoting behaviors at T_0 .

Transformational Statement I: The greater the self-care agency, the greater the R, M, K, HP, and SE.

Transformational Statement II: The greater the health-promoting behaviors, the greater the SA, HR, E, N, IS, and SM.

$$\text{Theorem 1: } HE = \frac{(R+M+K+HP+SE)}{(SA+HR+E+N+IS+SM)}$$

Epistemic Statement I: The greater the R, M, K, HP, and SE, at T_0 , the higher the score on the ES-CAS.

Epistemic Statement II: The greater the SA, HR, E, N, IS, and SM at T_0 , the higher the score on the H-PLP.

Summary

Utilizing Gibbs' (1972) formalization, the concepts of self-care agency and health-promoting behaviors are constructed into the proposed model of health embodiment. The notion of health embodiment has many implications for nursing and the model appears to have prescriptive power.

If the clinical phenomenon of health embodiment as defined by the researcher, can be supported and understood, practitioners could direct their attention to manipulating the factors that trigger the establishment of self-care agency and development of health-promoting lifestyles. This research sought to identify the self-care and health-promoting behaviors which may achieve statistically significant relationships thus indicating the presence of health embodiment.

Research Assumptions

The investigation was based on the following research assumptions:

1. Each individual has the ability to perform health-promoting behaviors through the exercise of self-care agency.
2. The Health-Promoting Lifestyle Profile (Walker et al., 1987) can be accepted as an adequate index and reliable measure of health-promoting behaviors.
3. The Exercise of Self-Care Agency Scale (Kearney & Fleischer, 1979) can be accepted as an adequate index and reliable measure of self-care agency.

Hypotheses

The following major hypotheses were derived from the propositional statement found within the model of health embodiment:

1. There is no significant relationship between health-promoting behaviors as measured by the subscales on the Health-Promoting Lifestyle Profile and exercise of self-care agency as measured by the total score on the Exercise of Self-Care Agency Scale in elderly Mennonites.

2. There is no significant relationship between exercise of self-care agency as measured by the total score on the Exercise of Self-Care Agency Scale and selected demographic variables of elderly Mennonites.

Research Question

The following research question was asked:

Is it possible to determine a health embodiment equation from the relationship, if any, between self-care agency and health-promoting behaviors?

Definition of Terms

For purposes of the study, the following terms were defined:

1. Self-Care Agency

- a. Theoretical--The complex capability for action that is activated in the performance of the actions or operation of self-care.
- b. Operational--The total score on the Exercise of Self-Care Agency Scale.

2. Health-Promoting Behaviors

- a. Theoretical--Self-initiated actions and perceptions which serve to maintain or enhance the level of wellness, self-actualization, and fulfillment of the individual.
- b. Operational--The scores from the six individual subscales of self-actualization, health responsibility, exercise, nutrition, interpersonal support, and stress management on the Health-Promoting Lifestyle Profile.

3. Elderly

- a. Theoretical--An arbitrary selection of those persons 65 years of age and older.
- b. Operational--Those persons born on or before April 30, 1922.

4. Mennonite Brethren

- a. Theoretical--An arbitrary selection of those members of the General Conference of Mennonite Brethren Churches.
- b. Operational--Those persons whose names appear as members of record in the specific General Conference of Mennonite Brethren Church, whether by baptism or transfer of membership.

Delimitations

The study was delimited to those oriented Mennonite Brethren individuals age 65 or older from the communities of Hillsboro and Buhler, Kansas.

Limitations

Limitations of the study were:

1. Other Mennonite groups may or may not have similar self-care agency or practice similar health-promoting behaviors although, as is described in the overview of Mennonite history, these groups are not unlike each other and all arise from the same cultural orientation.
2. Some individuals may refuse or be unable to participate, while others may become test-wise or react to the personal nature of some of the questions which may bias

results; however, all individuals will be treated equally and fairly.

Summary

This study sought to correlate exercise of self-care agency and health-promoting behaviors of the elderly Mennonite Brethren living in an area of Mennonite concentration found in south-central Kansas. The Mennonite communities selected for the study were Buhler and Hillsboro. These two communities were chosen on the basis that they were appropriate for the study in that each community developed from the same cultural tradition. Moreover, each community has a high concentration of elderly as evidenced by the fact that each community currently has a Mennonite operated home for the aged. The Salem Home was established in Hillsboro, Kansas in 1884, the first of its kind in North America, and the Sunshine Mission Home was established in Buhler, Kansas in 1945 (Shelly, 1955).

A framework entitled Health Embodiment, devised by the researcher was presented. Assumptions, definition of terms, delimitations, and limitations of the study were also addressed. The hypotheses were presented through the development of the proposition to be tested.

CHAPTER II

REVIEW OF LITERATURE

This chapter includes five sections. The first section addresses the literature which specifically reports research using the concept of self-care agency. The second section discusses the literature which specifically reports research relating to the concept of health-promoting behaviors. The third section examines the historical development of the concept of the term elderly. Both negative and positive connotations of the term are explored. The fourth and fifth sections review the literature regarding Mennonite history and the historical development Mennonite homes for the aged as these concepts pertain to the study.

An Overview of Research on Self-Care Agency

Due to the parameters of the investigation, the researcher chose to delimit this discussion to research that measures the concept of self-care agency. Furthermore, the construct of one's exercise of self-care agency is of interest to the researcher, as opposed to one's "perception" of self-care agency. Therefore, this review of literature provides the results of research

dealing specifically with exercise of self-care agency as it relates to the scope of this study.

The first research to appear in the literature which measured the notion of self-care agency was a study reported by Kearney and Fleischer (1979). The authors of the study wanted to develop an instrument that would measure the construct of exercise of self-care agency. Construct validity was established with the use of Rotter's Internal-External Locus of Control Scale (1966) and the Gough and Heilbrun Adjective Check List (1965). Subjects for the study included volunteer psychology students ($N = 153$) and volunteer nursing students ($N = 84$). Test-retest reliability was established at .77 for the nursing students. Split-half reliability was .80 and .81 for the first and second testings of the nursing students and .77 for the psychology students. The resulting instrument was a 43-item Likert scale with a maximum score possible of 172, indicating a high degree of exercise of self-care agency. The authors concluded that the tool did exhibit high reliability and content and construct validity (Kearney & Fleischer, 1987). The authors recommended that additional studies be conducted to validate their results with other populations to provide further evidence of construct validity.

Subsequent research that appeared in the literature involving the measurement of self-care agency was the work reported by Denyes (1980). Denyes endeavored to develop a tool that would measure self-care agency in adolescents. Subjects for the study included adolescents ranging in age from 14 to 18 years. Results of the study were based on 161 matched sets of data upon which a factor analysis was performed. The correlation between self-care agency scores and self-care practices scores was .73; correlation between self-care scores and health status was .68. The resulting instrument was a 35-item Likert scale with six subscales that measured various components of self-care agency. The author concluded that the instrument exhibited validity and reliability and was appropriate for use with adolescents (Denyas, 1980). The author recommended that further review and testing be conducted with other populations.

The next study to appear in the literature elaborated on the results of previous work--that of Kearney and Fleischer's tool. Lantz (1981) conducted a correlational design exploring the relationship between exercise of self-care agency and self-actualization in adults aged 65 and older. Measurement was obtained using the Exercise of Self-Care Agency Scale (Kearney & Fleischer, 1979) and the Personal Orientation Inventory (Shostrom, 1963). Utilizing

a sample size of 366, the resulting correlation between exercise of self-care agency and the subscales measuring self-actualization achieved the .05 level of significance or better. Further analysis revealed that components of self-actualization could predict approximately 45% of potential self-care ability. The author concluded that "self-worth and self-regard are important in a person's ability to assume an active self-care role" (Lantz, 1981, p. 123).

The literature between 1982 and 1985 reflected a movement towards the measurement of perceived self-care agency with the resulting development of a tool by Hanson and Bickel (1985) to measure that construct. However, a return to the measurement of exercise of self-care agency was noted in the literature during the years 1986 and 1987 with publication of research further addressing Kearney and Fleischer's tool. In the most recent study to appear in the literature regarding self-care agency, McBride (1987) examined the reliability and validity of Kearney and Fleischer's tool by testing construct validity with the Self-Directed Learning Readiness Scale (Guglielmino, 1977). Subjects for the study included 62 nursing students and 57 adult diabetic patients. Test-retest reliability was established at .55 for the patients and .76 for the

students. Split-half reliability was similar for both groups at .78 and .74. The author concluded that "there is a need for further study of the construct validity of the Exercise of Self-Care Agency Scale" (McBride, 1987, p. 315). This identified need was based on the fact that the student sample produced predictable results while the patient sample failed to provide predictable results. The author recommended that further research be conducted using other patient populations.

An Overview of Research on Health-Promoting Behaviors

Health promotion was first indexed in the nursing literature in 1983. Since that time a variety of conceptualizations regarding the notion of health promotion have been published in the literature. Due to the parameters of the investigation, the researcher chose to delimit this discussion to that research which explores the concept of health-promoting behaviors as defined by Pender (1987).

Although Christiansen first reported the determinants of health-promoting behavior in 1981, movement in the early literature regarding health promotion was about health promotion activities. Not until recently did research appear in the literature exploring the notion of health-

promoting behaviors. The first research report to appear in the literature which tests the notion of health-promoting behaviors is therefore a study reported by Walker et al. (1987). The authors of the study wanted to develop an instrument that would measure health-promoting behaviors. Subjects for the study included 952 adults. The reliability of the total scale was established at .922. The alpha coefficients for the six subscales ranged from .702 to .904. The resulting instrument was a 48-item Likert scale which included six subscales or components of health-promotion behavior: self-actualization, health responsibility, exercise, nutrition, interpersonal support, and 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, to explore correlates or determinants of health-promoting lifestyle, or to measure changes in health-promoting life-style as a result of interventions. (Walker et al., 1987, p. 80)

The authors recommended that additional studies be conducted with various populations to further establish construct validity. As of this date, reports on further use of this tool and further research on the concept of health-promoting behaviors have not yet appeared in the literature.

Historical Development of the Concept of Elderly

The derivation of the term elderly is known as far back as Hippocrates of Cos, the famous Greek physician, who attempted to describe elderly as "Springtime of old age," being years of age less than 70, "Green old age" as 71 through 75, "Real old age" as 75 through 80, "Ultimate old age" as 81 through 90, and "Caducity," (senility, fraility), as those of age over 91 (Ebersole & Hess, 1981). In the twentieth century all societies recognize at least three phases throughout the aging process: child, adult, and aged (Linton, 1936), although criteria for defining these phases varies by culture and with time.

Over time Webster's Dictionary has defined elderly as "rather old; specifically, being past middle age, old-fashioned and of, relating to, or characteristic of later life." With time Devlin's Dictionary of Synonyms and Antonyms, (elderly) has been synonymous with ancient, primitive, antique, antiquated, bygone, obsolete, early, prehistoric, immemorial, venerable, time-honored, superannuated, timeworn, patriarchal, olden, remote, gray, decrepit, aged, senile.

Most of the historical perspectives found in the literature focus on the term elderly as a biological as well as a cultural phenomenon. Pagan cultures who believed

in the spirit world often revered the elderly simply because they were thought to be the closest to the spirit world (Clark & Anderson, 1967). Christian cultures typically believed reverence for the elderly to be a direction from God (Clark & Anderson, 1967). Historically, the elderly had meaningful function in relinquishing their adult responsibilities in the preparation for death so that cultural continuity might be preserved through designation of heirs, descendible heirlooms, property, and the general sharing of esoteric knowledge; this was expected of the elderly to assure preservation within the group of traditions, knowledge, skills, and social institutions (Clark & Anderson, 1976). As can be seen by the brief overview of elderly so far presented, the concept continues to be a broadly categorized group of ideas ranging from specific operational definitions to cultural interpretations of the term.

In describing societies that define elderly, Clark and Anderson have shown a trend away from the functional definition of elderly historically to a more formal definition of elderly in society. These same authors have written:

The definition of (elderly) in contemporary Western civilization - and particularly in American society - is increasingly a formal rather than a functional one; and, essentially, it is a temporal definition. The

(elderly) are more and more designated as those who are known to have lived so many years. Such a definition is understandable, in view of the American elaboration of the concept of time - an elaboration without parallel in the known world The American formal definition of (elderly), then tends to be a temporal one, based on carefully kept records and calendrical reckonings. It is nearly impossible in American society today to live ones life without having the exact dates of ones birth . . . made a matter of public record. (Clark & Anderson, 1967, pp. 6-7)

The government of our country has further defined the elderly as those 65 years of age, at the time when most people become eligible for retirement with Social Security benefits. One author has written that as attitudes and expectations are formed on such as basis, that it would not be unreasonable to believe that many people become elderly because they and the world around them have accepted such a definition (Botwinick, 1978).

Critical factors that have constituted the concept of elderly have included documented changes in psychosocial status as well as physical changes. Palmore (1977) has described the following changes regarding elderly persons:

1. All five senses tend to decline.
2. Lung capacity decreases.
3. Physical strength declines.
4. Elderly persons require more time to learn something new.
5. Reaction time is slower.
6. Most medical practitioners give low priority to the care of elderly.
7. The majority of elderly persons work or desire to do so. (p. 314)

Previously it has been written that many elderly were poor, lived in the inner city, and had more chronic disease than did the young; with heart disease, cancer, and strokes being the three major medical problems that lead to death (Botwinick, 1978). Most definitions of elderly in light of the critical factors that have constituted the concept usually have included the idea of basic physical depletion of energy, irreversible limitations, and general decline due to the passage of time.

The above manifestations of the concept of elderly are static and negative terms, which have had few desirable connotations. There have been, however, some positive aspects of the concept of elderly which many past definitions of the term have overlooked. One author in demonstrating beneficial facts regarding the elderly wrote that the elderly have:

1. More stable value systems.
2. Increased wisdom and judgment.
3. Reduced responsibilities.
4. Economic benefits.
5. Release from the expectation of work.
6. Less pretentiousness.
7. Value of life.
8. Less fear of death. (Hayter, 1976, p. 19)

The elderly, increasing in numbers and wellness, have become their own best advocate in unifying their efforts to bring about change through such organizations as the Gray Panthers, and the American Association of Retired Persons

(AARP). The nursing community is continuing to focus on this increasing segment of the population with serious intent to upgrade the care of the elderly in health care settings and resident nursing care homes. Exploration, investigation, research, and refinement of a core of knowledge about nursing care of the elderly is vital to the increasing need society faces in meeting the challenge of its elderly population.

An Overview of Mennonite History

Most of the larger bodies of the Mennonite Church located throughout North America have roots in sixteenth-century Anabaptism, which means re-baptism or adult baptism (Wiebe, 1959). The origination of the Anabaptists can be traced as far back as the sixteenth-century in the Netherlands where Anabaptists were referred to as "Mennists" or "Mennonites" after Menno Simons, a Catholic priest, converted to Anabaptism in 1536 (Wiebe, 1959). "The Anabaptists . . . preached regeneration, refused the oath and participation in warfare, rejected infant baptism, and held to the separation of church and state" (Wiebe, 1959, p. 19).

As a religious reform movement, the Anabaptists produced a variety of groups throughout Europe including the Mennonites in Holland, the Swiss Brethren in

Switzerland, and the Hutterites in Austria. The language of those who originally came from the Netherlands was Dutch or Low-German and continued to be used well into the twentieth century by those Mennonites who had migrated to North America. "Historically, the events on record indicate that the Mennonite people have been connected with three mass migrations: To Prussia, to Russia, and to America" (Wiebe, 1959, p. 16). The variety of Mennonite denominations in North America that have roots in sixteenth-century Anabaptism are shown in Table 1.

The Mennonite Brethren Church had its origin in the great awakening that came to the Russian Mennonite community in the middle of the nineteenth century (Toews, 1982). Although the first Mennonite immigrants who founded Germantown in 1683 were of Dutch origin, the larger groups that settled in Pennsylvania at the beginning of the eighteenth century were of Swiss-German background (Toews, 1982). It would have been doubtful that the migration of eighteen thousand Mennonites from Russia to North America in the 1870's would have been likely if there had not been other Mennonite churches already in North America as shown in Table 2. The primary motive for leaving Russia at that time was the desire to continue to uphold the principle of nonresistance that was being threatened by the Imperial

Table 1

Membership in the Main Bodies of
Mennonite Groups in North America*

	Totals
Mennonite Church	106,501
General Conference Mennonite Church	60,397
General Conference of Mennonite Brethren Churches	35,563
Old Order Amish	34,000
General Conference of the Brethren in Christ	13,210
Old Order Mennonite	12,810
Church of God in Christ Mennonite (Holdeman)	10,000
Hutterian Brethren	9,370
Beachy Amish Mennonite	4,920
Evangelical Mennonite Conference	4,690
Evangelical Mennonite Brethren	3,965
Evangelical Mennonite Church	3,507
Sommerfeld Mennonite Church	3,400
Old Colony Mennonites in Alberta, British Columbia, Ontario, and Saskatchewan	2,310
Evangelical Mennonite Mission Conference	2,240
Chortitzer Mennonite Conference	2,000
Non Conference Hutterian Mennonites	1,170
Old Colony Mennonite Church (MB)	955
Reinland Mennonite Church	800
Old Order River Brethren	326

(Good & Good, 1979, pp. 78-79).

*Excludes children who are not yet communicant members.

Table 2

Mennonite Immigration to the United States

1. Lower Rhine to Germantown (1683-1702)	200
2. Swiss and Palatine Mennonites to Eastern Pennsylvania (1707-56)	4,000
3. Swiss and Palatine Amish to Eastern Pennsylvania (1738-56)	200
4. Alsace-Lorraine, Hessian and Bavarian Amish to Western Pennsylvania, Ohio, Illinois, and Iowa (1815-60)	2,700
5. Swiss Mennonites to Ohio and Indiana (1817-60)	500
6. Palatine Mennonites to Ohio, Illinois, and Iowa (1825-60)	200
7. Prussian Mennonites to Nebraska and Kansas (1874-80)	300
8. Prussian Mennonites to the prairie states (1874-80)	10,000
9. Russian Mennonites to Reedley, California (1930)	256
10. Scattered individuals (second half of the 19th Century) from Germany, Switzerland, France, and Russia to states west of the Mississippi	<u>200</u>
Total Immigrants	18,556

(Toews, 1982, p. 131).

Decree of 1870 (Toews, 1982). The Mennonite Brethren who came to North America in the decade following 1873 were from the 58 villages of the Molotschna Colony founded in 1804 in Ukraine, Russia (Toews, 1982).

An Overview of the Development of Mennonite Homes for the Aged

Because of the high concentration of elderly found in the two communities identified in this research study, and because of the established Mennonite homes for the aged that can be found in these communities, an understanding of how these institutions came to be is of value. There was little need for homes for the aged in the colonial period of Mennonite history in North America, as the provision for elderly was made in the establishment of the Mennonite homesteads (Shelly, 1955). Some groups of Mennonites still care for the elderly within extended households.

Although the Amish Mennonite are not included in this study, the Old Order Amish still care for their elderly family members by maintaining the practice of building a small apartment onto the main house; or a separate but closely connected small house which is called a grossdoddy house, in which the parents or grandparents retire when the time comes (Shelly, 1955). However, the majority of Mennonite families today, with increases in population and

urbanization, have moved to the nuclear family, with elderly members moving into Mennonite operated homes for the aged. Progressive Mennonite culture assumes that in modern society there are many elderly persons who are unable to care for themselves and who do not have the relatives or friends who can take on the responsibility. The Mennonite Church upholds a responsibility of Christian sharing and that of providing a homelike Christian atmosphere for its members (Shelly, 1955). The following account gives a description of the Mennonite concept of the elderly, and the resulting establishment of homes for the aged:

The slow growth of an awareness of the need for institutional care for the (elderly) was reflected by the fact that in the first two decades of the twentieth century only three homes were established. The first home for the aged sponsored by American Mennonites was the Salem Home at Hillsboro, Kansas, established in 1894 by the Krimmer Mennonite Brethren

In May 1954 there were 38 homes for the aged operated by Mennonites in eleven states in the United States and in four provinces in Canada. Possibly primary among the factors accounting for this increase in homes for the aged is the growing awareness of the need for a church-wide sharing in meeting the unique problems of the (elderly)

One significant factor has been a change from the large farmhouse to a smaller one in or near a town or city. Of course, the sheer fact of more (elderly) has brought the problems of the (elderly) to the forefront. (Shelly, 1955, p. 798)

Summary

The literature regarding exercise of self-care agency revealed a development of research knowledge concerning the concept in selected populations. A common theme found in the research literature is that exercise of self-care agency appears to be a legitimate concept which warrants the attention of nursing. Agreement is evidenced among the researchers that further measurement of self-care agency is necessary across well populations. An area of disagreement among the researchers is the value of measuring exercise of self-care agency among patient populations. The literature regarding health-promoting behaviors within the scope of this study was found to be at an embryonic stage and no subsequent research was found measuring Pender's model of health-promotion.

The literature regarding the elderly, and more specifically Mennonite elderly, revealed a homogeneous group of individuals interested in the health of respective group members. Moreover, interest in the health care of the Mennonite elderly was illustrated in the literature by discussion of Mennonite homes for the aged.

CHAPTER III

DESIGN AND METHODOLOGY

A triangulated design was used for this study as defined by Mitchell (1986). Specifically, methodological triangulation in terms of a holistic design as defined by Jick (1979) was used. Thus, a combination of both the within-method and across or between-method was used to increase the reliability and validity of the study. The within-method was designed into the study by using two different scales to measure the phenomenon of interest. The across or between-method was designed into the study by the use of dissimilar but complementary methods to measure the same subjects and phenomenon. Specifically, the use of qualitative methodology was employed by designing open-ended questions into the measurement and the use of quantitative methodology was employed by the use of two structured close-ended scales.

The quantitative aspect of the study was applied by a correlational design which has been defined by Waltz and Bausell (1981) as "an exploration of relationships or commonalities among factors" (p. 10). Donaldson and Crowley (1978) in their classic work encouraged nurses to conduct research that would relate individual studies to

one another and, "thereby, build a larger context for reference" (p. 113). Therefore, the correlational design was employed to explore the relationship between self-care agency and health-promoting behaviors. The method was descriptive in that it was conducted in a natural setting with no attempt made to introduce something new or to modify or control the study environment. The criterion or dependent variable, self-care agency, was measured by the Exercise of Self-Care Agency Scale (Kearney & Fleischer, 1979). Predictor or independent variables were scores, ratios, and interrelationships as measured by the Health-Promoting Lifestyle Profile (Walker et al., 1987).

The qualitative aspect of the study was applied by considering the demographic data such as age, gender, marital status, education level, living status, profession/occupation, retirement status, and membership history in the Mennonite Brethren Church in the complex relationship among the criterion and predictor variables. Furthermore, a self-rated rank of perceived health status and factors which were perceived by the participants to have had the greatest effect on their perceived health status were also requested on the demographic data sheet.

Setting

The study was conducted in an area of Mennonite concentration found in south-central Kansas. The two Mennonite communities selected for the study were Buhler and Hillsboro, Kansas. As presented previously, the data collection took place in a natural setting--that of the individual's private home, where the questionnaires could be answered privately with no attempt made to control or modify the study environment.

Population and Sample

The sample was derived from the population of elderly Mennonite Brethren living in the communities of Buhler and Hillsboro, Kansas. Specifically, the population was the total number of elderly Mennonite Brethren identified as members in the General Conference of Mennonite Brethren Churches. Thus, the sampling technique was purposeful as defined by Waltz and Bausell (1981), in that the subjects derived from the sample described are believed to be representative of the population. The criteria for inclusion of the subjects in the study was that they be:

1. Sixty-five years of age or older.
2. A member in the Mennonite Brethren Church of the designated community.
3. Willing to participate in the study.

The method of selection was to first obtain from the respective church ministers, a list of those members who were born on or before April 30, 1922. Each candidate was then mailed a questionnaire packet containing an introductory letter and related explanation. Therefore, inclusion in the sample was voluntary and all subjects within the sample who wished to participate were given the opportunity.

Protection of Human Subjects

The study followed the rules and regulations of the Texas Woman's University Human Subjects Review Committee. Compliance encompassed the following:

1. Permission to conduct the study was obtained from the research committee, from the Human Subjects Review Committee according to the Texas Woman's University Guidelines, and from the Graduate School prior to the initiation of the formal investigation (see Appendix A for approvals).
2. All assurances were provided to the subjects regarding confidentiality of the information and the anonymity of responses using the introductory letter contained in the questionnaire packet (see Appendix B for Questionnaire Packet).

3. The questionnaire packet included a statement construing informed consent as implied by the completion and return of the questionnaire packet (see Appendix B for Questionnaire Packet).

Instrumentation

The instruments selected for the study included two scales that yielded quantitative results and the demographic data sheet that provided qualitative information. The three tools that collectively formed the questionnaire packet are discussed separately in detail (see Appendix B for Questionnaire Packet).

Exercise of Self-Care Agency Scale

This scale was developed by Barbara Kearney and Barbara Fleischer in 1979 to measure an individual's exercise of self-care agency as defined previously by Dorothea Orem. The premises underlying the development of the tool were that self-care conduct is ego-processed, that self-care is learned through interpersonal relationships and communities, and that self-care conduct is affected by self-concept and level of maturity of the individuals as defined by the Nursing Development Conference Group in 1973. The tool is a 43-item instrument with items scored from 0 to 4 on a 5-point Likert scale. Written permission

for the use of this instrument was obtained from the authors (see Appendix C for correspondence).

Empirical indicators of the exercise of self-care agency that were developed into the scale were "(a) an attitude of responsibility for self, (b) motivation to care for self, (c) the application of knowledge to self-care, (d) the valuing of health priorities, and (e) high self-esteem" (Kearney & Fleischer, 1979, p. 27). Items that were related to these empirical indicators were used to formulate the questions. Content validity was established through a series of rating procedures performed by a panel of experts. Construct validity was tested by comparison of results on the instrument with results on Rotter's Internal-External Locus of Control Scale (1966) and on Gough and Heilbrun's Adjective Check List (1965). Subjects included volunteer students enrolled in university psychology classes ($N = 153$) and volunteer students in an associate degree nursing program ($N = 84$). The scale has been found to be reliable with both the test-retest and split-half methods. "The test-retest reliability was .77 for the nursing students; split-half reliabilities were .80 and .81, respectively for the first and second testings of the nursing students, and .77 for the psychology students" (Kearney & Fleischer, 1979, p. 25).

Those persons who are measured as demonstrating a high degree of self-care agency can be concluded to be positively self-controlled, dependable, assertive, intelligent, confident, helpful, responsible, and adaptable. Those who are competitive, aggressive, and dependent on others are measured as having a low degree of self-care agency. Figure IV depicts this description of self-care as it is used specifically within the framework of this study. To further illustrate a measurement in evidence of a high degree of exercise of self-care agency, the maximum score possible on the tool is 172.

Health-Promoting Lifestyle Profile

This profile was developed by Susan Walker, Karen Sechrist, and Nola Pender in 1987 to measure health-promoting behaviors as defined previously by Nola Pender. The tool is a 48-item instrument with items scored by summing responses to a 4-point response format. Each item is positively oriented to desirable health practices. The tool includes six subscales which resulted from the factor analysis into the dimensions of self-actualization, health responsibility, exercise, nutrition, interpersonal support, and stress management. The instrument appears to be a valid and reliable measure of health-promoting behaviors. "The alpha reliability coefficient for the total scale is

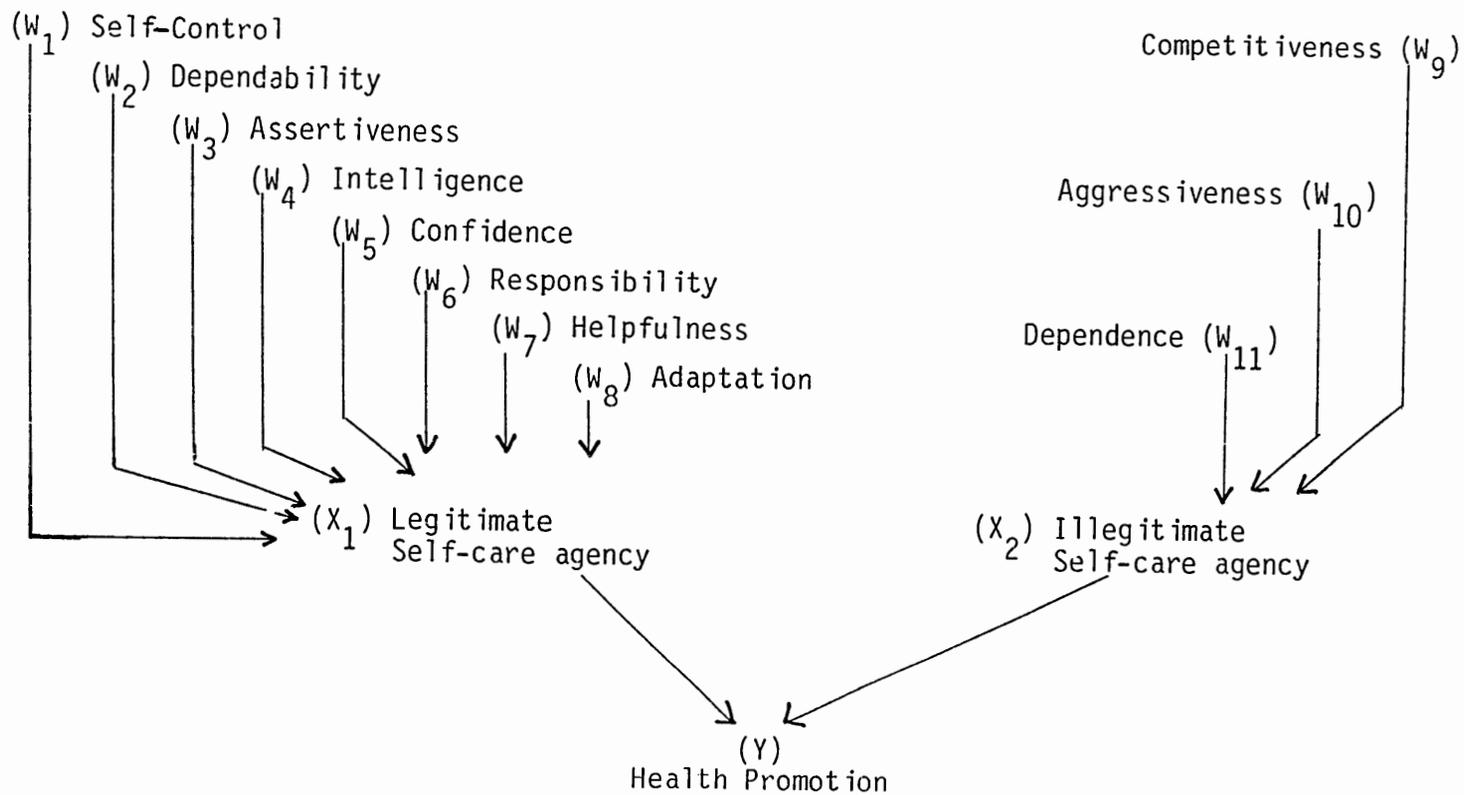


Figure IV. Self-Care Agency Using Blalock's Inventory of Causes with Intervening Variables

.922; alpha coefficients for the subscales range from .702 to .904" (Walker et al., 1987, p. 76). Subjects included adults in midwestern communities ($N = 952$). The extensive sampling led to evaluation of the profile in the areas of item analysis, factor analysis, and reliability measures as provided above. Written permission for the use of this instrument was obtained from the authors (see Appendix C for correspondence).

Demographic Data Sheet

The third and qualitative part of the instrumentation was a researcher-developed demographic data sheet. The data sheet was composed of 10 open-ended questions, 8 of which were regarding general demographic data. Question 9 asked the subject to rate perceived health status and question 10 asked the subject to identify those factors which were perceived to have had the greatest effect on that health status.

Pilot Studies

Two pilot studies were conducted to determine validity and reliability of the questionnaire packet. Content validity was established by evaluation of the questionnaire packet by numerous peers of the researcher, 10 lay people,

and evaluation by 5 experts in the field of theory development.

Pilot Study I

The purpose of Pilot I was to determine the validity or appropriateness of the selected scales. The methodology for Pilot I included the use of the three tools described under instrumentation and administering them in conjunction with an information sheet which addressed the appropriateness of the tools in terms of length, scope, and clarity. The researcher was concerned about the large number of questions resulting from the use of both tools and the personal nature of the questions for elderly subjects to answer. Additionally, the researcher wanted to know if the reading level would be difficult or tiring for the elderly subjects to complete and if the directions and wording were adequately clear as some questions on the Exercise of Self-Care Agency Scale are negatively worded and therefore potentially confusing. Furthermore, it was desired that face validity be established by a panel of 10 elderly subjects.

Pilot I testing was accomplished with a panel of 10 elderly volunteers from Casa View Christian Church in Dallas, Texas. For Pilot I, the researcher wanted to avoid using members of a Mennonite congregation in order to save

these subjects for use in the formal research process, yet a related sample was desired to assist in determining validity.

The results of Pilot I indicated that approximately 15 minutes were needed to complete the entire questionnaire packet. Regarding the length and scope of the questionnaire packet, the majority of the subjects responded that the questionnaire packet was appropriate. The majority of the respondents also considered the directions and wording to be clear. Based on the outcome of Pilot I testing, the researcher determined that the instruments should be retained in their present format for the value of previously established validity and reliability. A small revision was made in the demographic data sheet to separate primary occupation and retirement status to increase clarity of the elicited information.

Pilot Study II

The purpose of Pilot II was to determine the reliability of the questionnaire packet. The methodology for Pilot II included the use of the three tools described under instrumentation and administering the questionnaire packet to 30 potential subjects in the elderly Sunday-school class from the First Mennonite Brethren Church in Wichita, Kansas. The researcher was concerned in this

pilot study with establishing validity and reliability with Mennonite subjects. Additionally, the researcher was interested in examining the results of the pilot to determine if the two tools in fact measure two different constructs, and if the selected statistics were appropriate for the study.

Pilot II testing was accomplished by handing out the questionnaire packet to 30 potential subjects in the elderly Sunday-school class from which 24 subjects responded. The results of Pilot II indicated that given a level of significance of .01, the Pearson Product Moment Correlation Coefficients demonstrated that only one subscale of the Health-Promoting Lifestyle Profile correlated in a statistically significant manner with the total score on the Exercise of Self-Care Agency Scale. Table 3 depicts the Pearson Product Moment Correlation Coefficients of the pilot study sample, shown with associated probability. Because of the correlation results, it was determined that the study design did support and demonstrate validity and attention was then turned to reliability analysis. The resulting pilot group reliability demonstrated alpha reliability coefficients of .9090 on the Health-Promoting Lifestyle Profile and .9085 on the Exercise of Self-Care Agency Scale. Based on the

Table 3

Pilot II--Pearson Product Moment Correlation Coefficients

Exercise of self-care agency total score with:	<u>r</u>	<u>p</u>
Self-actualization subscale	.421	.040
Health responsibility subscale	.458	.024
Exercise subscale	.663	.000
Nutrition subscale	.294	.163
Interpersonal support subscale	.282	.182
Stress management subscale	.413	.045

(n = 24)

outcome of the Pilot II testing, the researcher determined that the constructs were significantly different. Following the proposal defense an additional revision was made in the demographic data sheet to include the question on living status.

Data Collection

Data were collected following proposal approval and approvals from the Human Subjects Review Committee and Graduate School of Texas Woman's University. The procedures for collection of data included the following:

1. In collaboration with the respective community church ministers, the identification of the potential subjects was made (see Appendix C for correspondence).
2. Questionnaire packets were mailed to each of the potential subjects.
3. After 1 month had elapsed, a second mailing was conducted to those who had not responded (see Appendix C for correspondence).

Treatment of Data

In terms of the quantitative aspect of the study, the hypotheses 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, therefore, used to determine the extent of the linear relationship with the predictor variables of health-promotion and the criterion variable of self-care agency. The use of the Pearson Product Moment Correlation Coefficient statistic was appropriate since the variables were measured on either an interval or low ratio scale.

The hypotheses 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). Therefore, the multiple regression coefficient, which ranges from 0 to 1, indicates the strength of the relationship between self-care agency and health-promoting behaviors.

Finally, descriptive statistics such as mean, median, mode, minimum and maximum scores, range, and standard deviation were used to examine the characteristics of each of the variables. Reliability statistics of the tools were also computed and reported.

Content Analysis

Content analysis has been defined as a systematic and objective research method for examining contents of

recorded information (Waltz, Strickland, & Lenz, 1984). The method is systematic in that specified criteria are consistently applied in the selection and analyzation of data. The method is objective in that explicit rules are incorporated. The use of content analysis as a methodology allows the researcher to identify, measure, describe, and make inferences about specified characteristics found within the written text.

For the purposes of this triangulated study, the content analysis portion of the methodology involved the reduction of the recorded open-ended responses into sets of categories that represented the presence, frequency, intensity, and nature of the selected characteristics. The process used for the study applied the following steps as recommended by Waltz et al. (1984) for the conduct of content analysis:

1. The universe of content was defined as the questionnaire packet.
2. The concepts to be measured were identified as those perceived beliefs reported by the subjects in response to questions 9 and 10 on the demographic data sheet.
3. The unit of analysis selected were the responses of the subjects in words.

4. The sampling plan developed included every item reported by every subject.

5. The scheme developed for categorizing the content was to drive the categories for analysis inductively from the data.

6. Coding was developed through ranking responses by listing key words.

7. Coding was pretested by applying small portions of the content to be analyzed to the specified categories to determine applicability and appropriateness.

8. Coding was conducted only by the researcher to increase reliability.

9. Performance of the actual analysis was then conducted by tabulating the frequency of recorded occurrences.

Summary

The development of a questionnaire packet to measure the phenomenon of health embodiment appropriate for a triangulated, holistic design was explained in this chapter. The pilot studies supported the content and construct validity and reliability of the instrumentation. Methodology for quantitative and qualitative data collection and testing was explained.

CHAPTER IV

ANALYSIS OF DATA

This chapter presents an analysis of the data received from the individual questionnaire packets and a discussion of reliability and validity findings as it pertains to the study. Presentation of the descriptive characteristics of the sample is included as well as a presentation of the findings and summary.

Description of Sample

The target population was drawn from an area of Mennonite concentration found in south-central Kansas. The Mennonite communities selected for the study were Buhler and Hillsboro. These two communities were chosen on the basis that they were appropriate for the study in that each community developed from the same cultural tradition. Furthermore, each community has a high concentration of elderly as evidenced by the fact that each community currently has a Mennonite operated home for the aged as discussed in the review of literature. During the formal research process it was determined that the metropolitan community of Wichita, previously selected for the pilot study, be included in the total study due to a large Mennonite Brethren Church found in that city and the fact

that plans are underway in that church to establish yet another Mennonite home for the aged. Furthermore, it was discovered that the results of the pilot study conducted in that community paralleled the results obtained from the communities designated in the study. Therefore, in subsequent discussion of results, the pilot study data will also be presented.

The community of Wichita provided a total of 30 elderly subjects for the pilot study from the First Mennonite Brethren Church. Of this group, 24 subjects responded. The rural community of Buhler provided a total of 105 elderly subjects from the Mennonite Brethren Church. Of this group, 95 subjects responded. Eighty-seven of the questionnaires were useable. The community of Hillsboro has three community churches. The Hillsboro Mennonite Brethren Church provided a total of 210 elderly subjects of which 127 responded with only 107 useable questionnaires. The Parkview Mennonite Brethren Church provided 63 elderly subjects of which 41 responded with only 38 useable questionnaires. The Ebenfeld Mennonite Brethren Church provided 37 elderly subjects of which 18 responded with only 14 useable questionnaires. Table 4 provides the distribution of the population. Included in the total responses are 57 subjects who responded after the

Table 4

Distribution of Target Population and Final Sample

Church	Total Population	Total Responses	% of Group Participation	Useable Responses	Group % of Sample
Wichita	30	24	80	24	8.9
Buhler	105	95	90	87	32.2
Hillsboro	210	127	60	107	39.6
Parkview	63	41	65	38	14.1
Ebenfeld	<u>37</u>	<u>18</u>	<u>49</u>	<u>14</u>	<u>5.2</u>
Total	445	305	69	270	100.0

follow-up mailing, thus increasing total participation in the study from 48% to 69%. The total useable responses for the study was 270, which provided nearly 3 subjects for each question on the 43-item and 48-item tools when combined.

Demographic data on age, gender, marital status, education, living status, primary occupation, retirement status, origin of membership, and perceived health status were obtained. Each subject who chose to participate completed the questionnaire packet which consisted of the 43-item Exercise of Self-Care Agency Scale, the 48-item Health-Promoting Lifestyle Profile, and the demographic data sheet. Tables 5 through 13 summarize the demographic data.

Table 5 represents the age distribution of the 270 subjects. The ages ranged from 65 to 96. For each age interval, the absolute frequency, percentage, and cumulative percentage are included. The frequency distribution of age indicates that 59.2% of the sample were between 65 and 74 years of age and 40.8% were between the ages of 75 and 96. The mean age of the total sample was 74.5 years.

Table 6 depicts the gender distribution of the sample. There was a higher percentage of female participants than

Table 5

Age Distribution of Sample

Age Interval	Absolute Frequency	Percentage (%)	Cumulative Percentage
65-69	73	27.0	27.0
70-74	87	32.2	59.2
75-79	45	16.7	75.9
80-84	36	13.3	89.2
85-90	18	6.7	95.9
90-	11	4.1	100.0

(N = 270)

Table 6

Gender Distribution of Sample

Gender	Absolute Frequency	Percentage (%)	Cumulative Percentage
Female	161	59.6	59.6
Male	109	40.4	100.0

(N = 270)

male participants. As discussed in the literature review regarding the elderly, this could be expected as longevity for females is traditionally slightly higher than for males. The frequency distribution for gender indicates that 59.6% of the sample were female while 40.4% were male.

Table 7 presents the marital status of the participants. The clear majority of the subjects reported being married. The frequency distribution of marital status indicates that 73% of the subjects were married while 19.3% were widowed. Only 7.7% reported having never married or being divorced.

Table 8 represents the educational level of the 270 subjects. For each educational interval, the absolute frequency, percentage, and cumulative percentage are included. The frequency distribution of education level indicates that 44.1% had completed high school while 34.4% had not finished high school and 21.5% had completed one or more degrees beyond high school.

Table 9 depicts the living arrangements of the sample. The lower total number of respondents is due to a change in the demographic data sheet following the pilot studies which did not ask the Wichita subjects to answer a question regarding their living arrangements. Of the 246 subjects who responded, 67.5% reported that they live at home with

Table 7

Distribution of Marital Status of Sample

Marital Status	Absolute Frequency	Percentage (%)	Cumulative Percentage
Married	197	73.0	73.0
Widowed	52	19.3	92.3
Single	19	7.0	99.3
Divorced	2	0.7	100.0

(N = 270)

Table 8

Educational Level Distribution of Sample

Education Interval	Absolute Frequency	Percentage (%)	Cumulative Frequency
6-8 years completed	63	23.3	23.3
9-11 years completed	30	11.1	34.4
High school diploma	119	44.1	78.5
Baccalaureate degree	20	7.4	85.9
Master's degree	32	11.9	97.8
Doctoral degree	6	2.2	100.0

(N = 270)

Table 9

Living Status Distribution of Sample

Living Arrangements	Absolute Frequency	Percentage (%)	Cumulative Percentage
Alone at home	47	19.1	19.1
With spouse at home	166	67.5	86.6
Alone in nursing home	17	6.9	93.5
With spouse in nursing home	4	1.6	95.1
In child's home (no spouse)	5	2.0	97.1
In child's home with spouse	2	0.9	98.0
With sibling or parent (no spouse)	5	2.0	100.0

(n = 246)

their spouse. Two percent reported that they live in their child's home alone--meaning without a spouse. Two percent reported that they live with their siblings or parent alone--meaning without a spouse. A total of 19.1% reported to live alone in their own home, while just 1.6% live with their spouse in the nursing home and only .9% live in their children's home with their spouse. The remaining 6.9% reported that they live alone in a nursing home.

Table 10 reflects the primary occupation of the sample. Nearly 30% reported that they were housewives. Thirty-three percent noted that they were professionals. Ten percent reported they were laborers, while 17.8% stated they were farmers. A remaining 9.6% reported that they were in domestic service.

Table 11 represents the retirement status of the sample. The large majority of 78.5% reported being retired while 21.5% reported not yet having retired, however a majority of those reporting to not have retired were housewives and numerous comments were received that "a housewife never retires."

Table 12 displays the origin of church membership of the sample. The large majority of the sample, 73.3%, reported that they were the children of Mennonite Brethren parents. As discussed in the literature review, this is an

Table 10

Primary Occupation Distribution of Sample

Primary Occupation	Absolute Frequency	Percentage (%)	Cumulative Percentage
Housewife	80	29.6	29.6
Professional	89	33.0	62.6
Laborer	27	10.0	72.6
Farmer	48	17.8	90.4
Domestic	26	9.6	100.0

(N = 270)

Table 11

Retirement Status Distribution of Sample

Retirement Status	Absolute Frequency	Percentage (%)	Cumulative Percentage
Yes	212	78.5	78.5
No	58	21.5	100.0

(N = 270)

Table 12

Church Membership Distribution of Sample

Origin of Membership	Absolute Frequency	Percentage (%)	Cumulative Percentage
Birth	198	73.3	73.3
Transfer	72	26.7	100.0

(N = 270)

important aspect to know since these subjects would be largely first and second generation children of parents from the Mennonite Brethren settlements in Russia. The remaining 26.7% who reported to have transferred into the Mennonite Brethren Church additionally reported having married into the church or transferred from other Mennonite churches of a different denomination.

Table 13 reflects the perceived health status of the sample. The frequency distribution of perceived health status indicates that 76.8% of the sample considered their health to be good or better, while only 23.2% considered their health to be average, fair, or poor. A variety of comments from this latter group referred to various medical diagnoses as the cause of this perceived health status.

In summary, the majority of the subjects were from Hillsboro, were between 65 and 74 years of age, female, married, held a high school diploma, lived with their spouse in their own home, were a professional or housewife, retired, and were born to Mennonite Brethren parents. Furthermore, the large majority of respondents considered their health to be good or better.

Reliability

Internal consistency is most usually determined by the Cronbach's Coefficient Alpha statistic. This statistic

Table 13

Perceived Health Distribution of Sample

Perceived Health Status	Absolute Frequency	Percentage (%)	Cumulative Percentage
Excellent	11	4.1	4.1
Very good	25	9.3	13.4
Good/Well	124	45.9	59.3
Average/Normal	19	7.0	66.3
Fair	79	29.3	95.6
Poor	12	4.4	100.0

(N = 270)

measures the extent to which a score on any one item is an indicator of the score on any other item of the instrument. A high alpha normally indicates that an instrument is measuring only one attribute, consequently one would question an alpha of less than .80 and would attempt to attain an alpha of over .90. Therefore, reliability is the dependability, stability, consistency, predictability and accuracy of the tools in question. Table 14 provides the reliability analysis of the tools used in the study both by group and total sample. The Health-Promoting Lifestyle Profile demonstrated a slightly higher internal consistency in all groups, with the exception of the Ebenfeld Church, than did the Exercise of Self-Care Agency Scale as shown in Table 14.

Validity

Construct validity is the degree to which a tool measures the construct under investigation. As previously addressed, the researcher was concerned that the instrumentation in the questionnaire packet in fact measured different but related constructs. Factor analysis is one of the most powerful ways to determine construct validity, therefore it was determined by the researcher that a factor analysis be additionally conducted to establish the construct validity of the instrumentation as

Table 14

Reliability Analysis: Cronbach's Coefficient Alpha

Group	Life Profile Alpha	Self-scale Alpha
Wichita (<u>n</u> = 24)	.9090	.9085
Buhler (<u>n</u> = 87)	.9426	.9073
Hillsboro (<u>n</u> = 107)	.9311	.8781
Parkview (<u>n</u> = 38)	.9192	.8435
Ebenfeld (<u>n</u> = 14)	<u>.8250</u>	<u>.8320</u>
Total sample:	.9351	.8932

(N = 270)

is necessary for drawing defensible conclusions about the phenomenon.

Hair, Anderson, Tatham, and Grabowsky (1979) defined factor analysis as a method of reducing a large number of variables to a smaller number by determining which cluster together. Furthermore, a correlation matrix among the variables is determined and a new set of variables results based on the interrelationships.

Principal components analysis as described by Hair et al. (1979) computes the minimum number of factors needed. Principal components are the transformations of the variables into composite oblique or orthogonal variables. Oblique variables are correlated and orthogonal variables are uncorrelated. Moreover, orthogonal rotation is also called varimax. Unrotated factor analysis elicits factors in a decreasing order of importance. Thus, Factor I will account for the most variance of the data while Factor II accounts for the residual variance after the extraction of Factor I. Hair et al. (1979) further documented significant loading on every variable beginning with the first factor which is then described as a general factor.

Eigenvalues are a value equal to the sum squared weights of a factor, therefore, factors with an eigenvalue of 1.00 or greater serve to form a new factor structure.

The factor loadings describe the correlation between the item and the factor. The loadings provide a description of the extent to which an item measures a factor. The clustering of variables is clearer after rotation of the factor matrix. According to Hair et al. (1979) the rotation of factors reassigns the variance from previous factors to subsequent ones and results in a more meaningful pattern of the simplified factor structure. Therefore, orthogonal rotation by the varimax method is used on all factors with an eigenvalue of 1.00 or greater.

Due to constraints of the computer system available to the researcher, the factor analysis was only possible by subscales. Tables 15 through 20 summarize the factor extraction for all items on the Exercise of Self-Care Agency Scale with the appropriate items on the Health-Promoting Lifestyle Profile subscales as specified for each table. A range of 13 to 15 factors was extracted for each subscale as shown by the appropriate table.

Following the review of the initial factor analysis, factor loadings and communalities for each item were evaluated and the rotated factor loadings were examined to determine loadings over .4. Tabachnick and Fidell (1983) report the following guidelines in evaluating loadings:

Table 15

Summary of Factor Extraction for Fifteen Factors From
Self-Scale with Self-Actualization Subscale

Factor	Eigenvalue	Factor Extraction	Cumulative %
		% Variance Explained	of Variance Explained
1	12.979	23.2	23.2
2	4.091	7.3	30.5
3	2.835	5.1	35.5
4	1.937	3.5	39.0
5	1.746	3.1	42.1
6	1.541	2.8	44.9
7	1.496	2.7	47.5
8	1.377	2.5	50.0
9	1.293	2.3	52.3
10	1.226	2.2	54.5
11	1.183	2.1	56.6
12	1.127	2.0	58.6
13	1.062	1.9	60.5
14	1.022	1.8	62.3
15	1.003	1.8	64.1

Table 16

Summary of Factor Extraction for Fourteen Factors From
Self-Scale with Health Responsibility Subscale

Factor	Eigenvalue	Factor Extraction	Cumulative %
		% Variance Explained	of Variance Explained
1	11.794	22.3	22.3
2	3.778	7.1	29.4
3	2.944	5.6	34.9
4	1.827	3.4	38.4
5	1.816	3.4	41.8
6	1.667	3.1	45.0
7	1.396	2.6	47.6
8	1.311	2.5	50.1
9	1.280	2.4	52.5
10	1.225	2.3	54.8
11	1.181	2.2	57.0
12	1.128	2.1	59.1
13	1.090	2.1	61.2
14	1.041	2.0	63.2

Table 17

Summary of Factor Extraction for Thirteen Factors
From Self-Scale with Exercise Subscale

Factor	Eigenvalue	Factor Extraction	Cumulative %
		% Variance Explained	of Variance Explained
1	11.048	23.0	23.0
2	3.738	7.8	30.8
3	2.165	4.5	35.3
4	1.876	3.9	39.2
5	1.758	3.7	42.9
6	1.470	3.1	45.9
7	1.355	2.8	48.8
8	1.259	2.6	51.4
9	1.207	2.5	53.9
10	1.159	2.4	56.3
11	1.107	2.3	58.6
12	1.045	2.2	60.8
13	1.015	2.1	62.9

Table 18

Summary of Factor Extraction for Fifteen Factors
From Self-Scale with Nutrition Subscale

Factor	Eigenvalue	Factor Extraction	Cumulative %
		% Variance Explained	of Variance Explained
1	10.988	22.4	22.4
2	3.859	7.9	30.3
3	2.102	4.3	34.6
4	1.873	3.8	38.4
5	1.648	3.4	41.8
6	1.579	3.2	45.0
7	1.368	2.8	47.8
8	1.288	2.6	50.4
9	1.235	2.5	52.9
10	1.189	2.4	55.4
11	1.159	2.4	57.7
12	1.092	2.2	60.0
13	1.060	2.2	62.1
14	1.021	2.1	64.2
15	1.004	2.0	66.3

Table 19

Summary of Factor Extraction for Thirteen Factors
From Self-Scale with Interpersonal Support Subscale

Factor	Eigenvalue	Factor Extraction	Cumulative %
		% Variance Explained	of Variance Explained
1	11.307	22.6	22.6
2	3.722	7.4	30.1
3	2.252	4.5	34.6
4	1.900	3.8	38.4
5	1.736	3.5	41.8
6	1.458	2.9	44.8
7	1.385	2.8	47.5
8	1.325	2.6	50.2
9	1.269	2.5	52.7
10	1.201	2.4	55.1
11	1.139	2.3	57.4
12	1.112	2.2	59.6
13	1.035	2.1	61.7

Table 20

Summary of Factor Extraction for Fourteen Factors
From Self-Scale with Stress Management Subscale

Factor	Eigenvalue	Factor Extraction % Variance Explained	Cumulative % of Variance Explained
1	11.233	22.5	22.5
2	3.738	7.5	29.9
3	2.222	4.4	34.4
4	1.878	3.8	38.1
5	1.729	3.5	41.6
6	1.543	3.1	44.7
7	1.375	2.7	47.4
8	1.343	2.7	50.1
9	1.307	2.6	52.7
10	1.158	2.3	55.0
11	1.130	2.3	57.3
12	1.093	2.2	59.5
13	1.032	2.1	61.6
14	1.023	2.0	63.6

1. .71 or greater (50% variance) is excellent.
2. .63 or greater (40% variance) is very good.
3. .55 or greater (30% variance) is good.
4. .45 or greater (20% variance) is fair.
5. .32 or greater (10% variance) is poor.

Tables 21 through 24 provide a summary of the rotated factor loadings by subscale based on the guidelines and, therefore, only those items loading at .4 or higher are included in the tables. Tabachnick and Fidell (1983) further wrote that factors comprised by only a few variables or less should probably not be deemed appropriate.

Table 21 depicts the factor loadings between the Exercise of Self-Care Agency Scale and the Health-Promoting Lifestyle Profile self-actualization subscale. As shown, the subscale items loaded significantly ($> .4$) on factors 1 and 13 whereas only one item from the self-scale loaded on these factors.

Table 22 depicts the factor loadings between the Exercise of Self-Care Agency Scale and the Health-Promoting Lifestyle Profile health responsibility subscale. As shown, the subscale items loaded significantly ($> .4$) on factors 4 and 5 whereas only one item from the self-scale loaded on these factors.

Table 21

Summary of Rotated Factor Loadings from Self-Scale with Self Actualization Subscale

Factors:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Life 3	.575														
Life 8	.660														
Life 9	.607														
Life 12	.670														
Life 16	.409												.535		
Life 17	.611														
Life 21	.639														
Life 23	.558														
Life 29	.568														
Life 34	.703														
Life 37	.421														
Life 44	.608														
Life 48	.701														
Self 1									.431					.610	
Self 2														.405	

(table continues)

Factors:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Self 3					.495						.429				
Self 4								.550							
Self 5								.517							
Self 6					.701										
Self 7													.452		
Self 8							.737								
Self 9														.467	
Self 10					.699										
Self 11															
Self 12									.626						
Self 13						.519									
Self 14						.600									
Self 15			.634												
Self 16					.659										
Self 17						.672									
Self 18						.676									
Self 19															

(table continues)

Factors:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Self 20							.485								
Self 21									.622						
Self 22					.772										
Self 23															.808
Self 24		.475													
Self 25					.610										
Self 26			.476												
Self 27			.648												
Self 28				.502											
Self 29		.479						.459							
Self 30		.733													
Self 31	.427														
Self 32				.672											
Self 33			.653												
Self 34				.522											
Self 35												.734			
Self 36												.478			
Self 37		.480													

(table continues)

Factors:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Self 38		.779													
Self 39											.542				
Self 40		.487													
Self 41							.406								
Self 42										.691					
Self 43										.560					

Table 22

Summary of Rotated Factor Loadings from Self-Scale with Health Responsibility Subscale

Factors:	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Life 2				.406										
Life 7				.758										
Life 15					.435									
Life 20														
Life 28				.534										
Life 32				.736										
Life 33					.787									
Life 42				.473	.480									
Life 43				.455										
Life 46					.804									
Self 1							.460			.418				
Self 2									.694					
Self 3						.530								
Self 4	.503									.415				
Self 5	.445	.433												
Self 6						.666								

(table continues)

Factors:	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Self 7									.731					
Self 8								.669						
Self 9														.663
Self 10						.629								
Self 11														
Self 12	.456													.431
Self 13							.544							
Self 14							.589							
Self 15	.520													
Self 16						.727								
Self 17							.664							
Self 18							.530							
Self 19														
Self 20								.466						
Self 21	.459													
Self 22			.737											
Self 23													.690	
Self 24		.446												

(table continues)

Factors:	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Self 25			.576											
Self 26	.635													
Self 27	.718													
Self 28			.530								.411			
Self 29		.505												
Self 30		.721												
Self 31									.709					
Self 32			.750											
Self 33	.521													
Self 34			.586			.405								
Self 35												.801		
Self 36												.492		
Self 37		.541												
Self 38		.784												
Self 39											.605			
Self 40		.482						.407						
Self 41													.494	
Self 42				.456										
Self 43														

Table 23 depicts the factor loadings between the Exercise of Self-Care Agency Scale and the Health-Promoting Lifestyle Profile exercise subscale. As shown, the subscale items loaded significantly ($> .4$) on factors 4 and 11 whereas only three items from the self-scale loaded on these factors.

Table 24 depicts the factor loadings between the Exercise of Self-Care Agency Scale and the Health-Promoting Lifestyle Profile nutrition subscale. As shown, the subscale items loaded significantly ($> .4$) on factors 6 and 11 whereas no item from the self-scale loaded on these factors.

The subscales of interpersonal support and stress management when rotated failed to converge in 24 attempts and therefore, no varimax was possible to report. Consequently, the researcher determined that the two individual tools indeed measure separate and different constructs independently and therefore, support the construct validity necessary to draw defensible conclusions in terms of the instrumentation of the study.

Findings

Due to the nature of the study, the findings of the study are presented in terms of the two methods of quantitative and qualitative analysis. The subsequent

Table 23

Summary of Rotated Factor Loadings from Self-Scale with Exercise Subscale

Factors:	1	2	3	4	5	6	7	8	9	10	11	12	13
Life 4				.675									
Life 13				.770									
Life 22				.466							.519		
Life 30				.438									
Life 38				.688									
Self 1									.535				
Self 2							.722						
Self 3						.452							
Self 4				.473									
Self 5	.508												
Self 6						.645							
Self 7									.740				
Self 8								.695					
Self 9												.638	
Self 10						.608							
Self 11													

(table continues)

Factors:	1	2	3	4	5	6	7	8	9	10	11	12	13
Self 12	.458											.443	
Self 13					.539								
Self 14					.667								
Self 15													
Self 16						.713							
Self 17					.638								
Self 18					.675								
Self 19													
Self 20	.451												
Self 21	.517												
Self 22			.717										
Self 23													.759
Self 24		.496											
Self 25			.626										
Self 26	.636												
Self 27	.737												
Self 28			.501										
Self 29				.466									

(table continues)

Factors:	1	2	3	4	5	6	7	8	9	10	11	12	13
Self 30		.703											
Self 31							.718						
Self 32			.716										
Self 33	.539												
Self 34			.575							.469			
Self 35											.689		
Self 36													
Self 37		.511											
Self 38		.787											
Self 39										.527			
Self 40		.616											
Self 41													
Self 42													
Self 43													

Table 24

Summary of Rotated Factor Loadings from Self-Scale with Nutrition Subscale

Factors:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Life 1											.832				
Life 5						.458									
Life 14											.819				
Life 19						.585									
Life 26						.774									
Life 35						.725									
Self 1								.586							
Self 2							.696								
Self 3			.484												
Self 4								.452							
Self 5	.401														
Self 6			.658												
Self 7								.731							
Self 8									.715						
Self 9														.716	
Self 10			.650												

(table continues)

Factors:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Self 11															
Self 12	.492												.404		
Self 13				.607											
Self 14				.618											
Self 15	.520														
Self 16			.735												
Self 17				.654											
Self 18				.695											
Self 19															
Self 20									.426						
Self 21															
Self 22					.736										
Self 23														.759	
Self 24		.475													
Self 25					.563										
Self 26	.584														
Self 27	.748														
Self 28										.524					

(table continues)

Factors:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Self 29		.408													.511
Self 30		.750													
Self 31							.757								
Self 32					.750										
Self 33	.678														
Self 34					.563										
Self 35												.792			
Self 36												.453			
Self 37		.504													
Self 38		.813													
Self 39										.592					
Self 40		.587													
Self 41									.430						
Self 42															
Self 43															

sections address findings within the scope of the selected statistics as follows:

1. Pearson Product Moment Correlation Coefficients between the criterion variable of the Exercise of Self-Care Agency Scale and the predictor variables of the Health-Promoting Lifestyle Profile subscales.

2. Pearson Product Moment Correlation Coefficients between the criterion variable of the Exercise of Self-Care Agency Scale and the predictor variables of the Demographic Data Sheet.

3. Multiple regression coefficients between the criterion variable of the Exercise of Self-Care Agency Scale and the predictor variables of the Health-Promoting Lifestyle Profile subscales.

4. Multiple regression coefficients between all variables and additionally addressing stepwise statistics.

5. Qualitative findings within the previously presented framework of content analysis.

Quantitative Results

As previously outlined, the most appropriate quantitative method for describing the relationship between the criterion variable and predictor variables is through correlational procedures such as the Pearson Product Moment Correlation Coefficient statistic. The first area measured

was the correlation between the criterion variable and the predictor variables of each subscale. Table 25 portrays the results of this analysis. Based on an established level of significance for this study of .01, a significant relationship is evidenced between each subscale score and the total scale score as shown for the total sample of 270 subjects. When reviewing the correlation data by group, a statistical significant relationship is noted for all groups with a sample size greater than 30 subjects across the subscales.

The second area of measurement was the correlation between the criterion variable and the predictor variables of the demographic data sheet. Table 26 depicts the results of this analysis for the total sample. Based on an established level of significance for this study of .01, a significant relationship is noted only between the criterion variable and the demographic variable of perceived health status.

Due to the statistical significance found between the perception of health status as expressed by the subjects and the performance of the subjects on the tools, mean scores were reviewed by breakdown analysis. The results of the breakdown analysis is displayed in Table 27. A trend is noted in all areas of decreasing performance scores when

Table 25

Summary of Pearson r Statistics Between Criterion and Subscale Predictor Variables

Variables	Self-Actualization Subscale		Health Responsibility Subscale		Exercise Nutrition Subscale		Interpersonal Support Subscale		Stress Management Subscale		Group		
	r	p	r	p	r	p	r	p	r	p			
Self-scale	.421	.040	.458	.024	.663	.000	.294	.163	.282	.182	.413	.045	Wichita ($\underline{n} = 24$)
Self-scale	.701	.000	.500	.000	.541	.000	.509	.000	.501	.000	.546	.000	Buhler ($\underline{n} = 87$)
Self-scale	.523	.000	.467	.000	.370	.000	.472	.000	.431	.000	.409	.000	Hillsboro ($\underline{n} = 107$)
Self-scale	.492	.002	.477	.002	.445	.005	.476	.003	.431	.007	.479	.002	Parkview ($\underline{n} = 38$)
Self-scale	.785	.001	.340	.234	.065	.826	.360	.207	.545	.044	.459	.099	Ebenfeld ($\underline{n} = 19$)
Self-scale	.608	.000	.505	.000	.484	.000	.485	.000	.477	.000	.501	.000	Total ($\underline{N} = 270$)

Table 26

Summary of Pearson r Statistics Between Criterion and
Demographic Predictor Variables

Demographic Variables	<u>r</u>	<u>p</u>
1. Age	.072	.239
2. Gender	-.089	.147
3. Marital status	.137	.025
4. Education level	.108	.077
5. Living status	.101	.098
6. Occupation/Profession	-.151	.013
7. Retirement status	-.019	.759
8. Origin of membership	.043	.480
9. Perceived health status	-.202	.001

(N = 270)

Table 27

Distribution of Perceived Health Status by Breakdown with Total Scale and Subscale Score Means

Perceived Health Status	Self-Care Agency Total Scale	Lifestyle Profile Total Scale	Self-Actualization Subscale	Health Responsibility Subscale	Exercise Subscale	Nutrition Subscale	Interpersonal Support Subscale	Stress Management Subscale	Cases
Excellent	147.1818	157.8182	47.8182	29.0000	13.6364	20.0909	24.2727	23.0000	11
Very good	127.8000	145.3600	44.0800	26.6400	11.7200	20.4400	22.0000	20.4800	25
Good	126.3306	139.9194	43.0484	25.5806	11.3468	19.5968	20.5081	19.8387	124
Average	121.0000	139.5263	41.0526	26.8421	11.0000	20.1053	20.5789	19.9474	19
Fair	123.6456	138.1266	40.9620	26.2405	10.6582	19.1392	20.5823	20.5443	79
Poor	117.2500	133.4167	38.0833	25.2500	9.6667	19.5000	21.1667	19.7500	12
Mean	125.7519	140.3111	42.3667	26.0852	11.1741	19.5926	20.8556	20.2370	270

related to self-reported perceived health status as shown in the table.

The third area of measurement was the multiple regression coefficients between the criterion variable and the predictor variables of each subscale. Table 28 portrays the results of this analysis. Based on the established level of significance for this study of .01, a significant relationship is evidenced between each subscale score and the total scale score as shown for the total sample of 270 subjects.

The last area of measurement was the multiple regression coefficients between all variables as shown in Table 29. Based on an established level of significance for the study of .01, a significant relationship was found between the following variables:

1. Age and stress management.
2. Gender and nutrition.
3. Gender and stress management.
4. Marital status and stress management.
5. Education level and self-actualization.
6. Living status and self-actualization.
7. Occupation and self-care agency.
8. Occupation and health responsibility.
9. Occupation and nutrition.

Table 28

Summary of Multiple Regression Coefficients Between Criterion and Subscale Predictor Variables

Variables	Self-Care		Self-	Health	Exercise	Nutrition	Interpersonal	Stress
	Agency	Actualization	Responsibility	Support			Management	
	Total	Subscale	Subscale	Subscale	Subscale	Subscale	Subscale	Subscale
Self-care agency Total Scale	$\frac{r}{p}$ 1.000 .999	.608 .000	.505 .000	.484 .000	.485 .000	.477 .000	.501 .000	
Self-actualization Subscale	$\frac{r}{p}$.608 .000	1.000 .999	.530 .000	.430 .000	.496 .000	.661 .000	.577 .000	
Health responsibility Subscale	$\frac{r}{p}$.505 .000	.530 .000	1.000 .999	.533 .000	.574 .000	.647 .000	.640 .000	
Exercise Subscale	$\frac{r}{p}$.484 .000	.430 .000	.533 .000	1.000 .999	.437 .000	.336 .000	.449 .000	
Nutrition Subscale	$\frac{r}{p}$.485 .000	.496 .000	.574 .000	.437 .000	1.000 .999	.485 .000	.526 .000	
Interpersonal support Subscale	$\frac{r}{p}$.477 .000	.661 .000	.647 .000	.336 .000	.485 .000	1.000 .999	.632 .000	
Stress management Subscale	$\frac{r}{p}$.501 .000	.577 .000	.640 .000	.449 .000	.526 .000	.632 .000	1.000 .999	

(N = 270)

Table 29

Summary of Multiple Regression Coefficients Between All Variables

Variables	Self-Care		Self-	Health	Exercise	Nutrition	Interpersonal	Stress
	Agency	Actualization	Responsibility	Support			Management	
	Total Scale	Subscale	Subscale	Subscale	Subscale	Subscale	Subscale	Subscale
Age	r	.072	.017	.023	.019	-.047	.015	.153
	p	.119	.389	.353	.380	.219	.402	.006
Gender	r	-.088	.061	-.132	.028	-.281	-.081	-.162
	p	.074	.160	.015	.323	.000	.093	.004
Marital status	r	.137	-.063	.045	.028	.074	-.018	.144
	p	.012	.153	.231	.321	.112	.382	.009
Education level	r	.108	.171	.133	.120	.138	.112	.048
	p	.038	.002	.014	.024	.012	.033	.217
Living status	r	.101	.157	.043	.030	.084	.019	.079
	p	.049	.005	.239	.309	.085	.381	.098
Occupation/profession	r	-.151	-.043	-.157	-.062	-.221	-.067	-.067
	p	.006	.240	.005	.154	.000	.137	.136
Retirement status	r	-.019	-.083	.047	-.083	.032	-.040	-.014
	p	.380	.086	.223	.087	.301	.254	.410
Origin of membership	r	.043	.072	.028	.030	.010	.039	.027
	p	.240	.118	.323	.312	.433	.259	.330
Perceived health status	r	-.202	-.278	-.037	-.178	-.107	-.122	-.033
	p	.000	.000	.273	.002	.039	.023	.292

(N = 270)

10. Perceived health status and self-care agency.
11. Perceived health status and self-actualization.
12. Perceived health status and exercise.

The final statistical method subsequently applied was the multiple regression analysis stepwise. This procedure was additionally used to assess what scores on the lifestyle profile could predict a higher score on the Exercise of Self-Care Agency Scale. Waltz and Bausell (1987) further 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 that has the strongest relationship with the criterion variable is computed and enters the equation first after which successive variables are added or deleted depending upon their contribution to the unaccounted variation of the criterion variable. Table 30 displays the results of the stepwise procedure. The predictor variables of self-actualization, exercise, and nutrition were computed to be of most importance in determining exercise of self-care agency. The predictor variables selected are presented in the table according to their computed level of importance. The overall F of the procedure indicates the significance of the equation's prediction ability.

Table 30

Summary of Stepwise Multiple Regression Analysis Between
Criterion and Subscale Predictor Variables

Variables	(1) Self-Actualization	(2) Exercise	(3) Nutrition
Multiple <u>R</u>	.60811	.65602	.67220
<u>R</u> Square	.36980	.43037	.45185
<u>R</u> Square Change	.36980	.06057	.02148
Significant <u>F</u> Change	.0000	.0000	.0014
<u>F</u>	157.25876	100.86187	73.09038
Significant <u>F</u>	<.0001	<.0001	<.0001

(N = 270)

As shown in Table 31, the stepwise analysis showed the three subscales of self-actualization, exercise, and nutrition as having the ability to predict approximately 67% of the self-care potential and ability. In an attempt to identify the best model, or an equation of predictors, consideration was given to the demographic data as well. Table 31 provides the results of a second stepwise procedure showing the three subscales previously identified as well as the influence of the demographic variable of marital status as a predictor variable. When combined, these four variables predict approximately 69% of the self-care potential.

Qualitative Results

As previously addressed, methodology for the conduct of content analysis as described by Waltz et al. (1984) was followed. The categories derived inductively for the analysis from the pilot data are displayed in Table 32. These categories were pretested and found to be applicable and appropriate. Most subjects included several responses and, therefore, all responses were included in the analysis and are tabulated in the table.

The majority of perceived factors as most influential upon health as reported by the subjects were positive. The most frequently occurring response was that Christian

Table 31

Summary of Stepwise Multiple Regression Analysis Between Criterion and
All Predictor Variables

	(1)	(2)	(3)	(4)
Variables	Self-Actualization	Exercise	Marital Status	Nutrition
Multiple <u>R</u>	.60811	.65602	.67531	.68770
<u>R</u> Square	.36980	.43037	.45605	.47293
<u>R</u> Square Change	.36980	.06057	.02568	.01689
Significant <u>F</u>				
Change	.0000	.0000	.0005	.0039
<u>F</u>	157.25876	100.86187	74.33710	59.44553
Significant <u>F</u>	<.0001	<.0001	<.0001	<.0001

(N = 270)

Table 32

Summary of Responses from Content Analysis of Perceived Factors
That Most Influence Health

Categories:	Christian Lifestyle	Good Diet	Negative Responses	Hard Work	Active Lifestyle	Exercise	Prayer/ Faith	Positive Attitude	Rest	Emotional Control
Wichita	9	10	1	4	3	6	5	1	2	2
Buhler	41	17	18	19	13	7	12	7	1	0
Hillsboro	50	38	27	23	15	13	8	9	3	1
Parkview	19	12	10	7	2	6	7	2	1	0
Ebenfeld	<u>10</u>	<u>5</u>	<u>2</u>	<u>4</u>	<u>5</u>	<u>3</u>	<u>2</u>	<u>2</u>	<u>1</u>	<u>0</u>
Total	129	82	58	57	38	35	34	21	8	3

Positive n = 407

Negative n = 58

lifestyle had the greatest effect on health. This response was elaborated upon by the subjects as including the notions of "clean living," "abstinence of tobacco and alcohol," and the "establishment of a moral set of home and health values."

The next most reported factor was that of a good diet. This factor also included the notion of a variety of supplemental vitamins and one subject elaborated on the benefits of "Barley Green." Further reports in this category included the "preparation of a well-balanced diet," and one subject reported that she "quit baking zwiebach."

Although negative responses totaled 58 and, therefore, became the third most reported category, these responses were compiled into just one group as compared to the 407 positive responses when compiled into just one group. Furthermore, the negative responses ranged from such situations as the loss of loved ones to miscellaneous operations, accidents, illnesses, and age. Many subjects cited stress as having had the greatest effect on their health. Another subject reported that the "wrong medicine prescribed by a doctor" had influenced health. Most other subjects cited occupational hazards such as "milo dust."

The next category most frequently reported as positively affecting health was hard work. This category included responses such as "hard work in the outdoors," "hard work in farming," and "hard work in the fresh air."

Active lifestyle was the next most commonly reported category which included responses such as "keeping busy," "having friends to visit," and "active involvement with family, church, and community." An additional response in this category was "reading literature regarding health" and "frequent visits to the doctor."

Exercise was the next most frequent response which most often included "walking." Another frequently reported form of exercise was "gardening."

Prayer and faith was the next most frequently reported category which included the notion of "taking your concerns to the Lord," "praying for healing," and "staying close to God." Further responses included the notion of having been "blessed by God," in terms of health and having had "parents who instilled health and moral values."

Having a positive attitude was also reflected by the subjects as having had an effect on their health. This notion encompassed the areas of "a good job," "happy home," and "positive uplook."

Rest was mentioned by eight subjects. This category included "ability to sleep well" and "frequent naps."

The final category mentioned by three subjects was that of emotional control. This notion encompassed the response "control of one's emotions" as having had the greatest effect on health.

Summary

The sample was described in terms of age, gender, marital status, education level, living status, occupation/profession, retirement status, origin of membership, and perceived health status. Reliability was presented in terms of the Cronbach's Coefficient Alpha statistic for the instrumentation selected. The alpha for the total sample ($N = 270$) on the Exercise of Self-Care Agency Scale was .8932. The alpha for the total sample ($N = 270$) on the Health-Promoting Lifestyle Profile was .9351. Validity of the instrumentation was addressed in terms of a factor analysis. To obtain construct validity, principal components factor analysis with orthogonal rotation was used by subscale. It was found that although the subscales of the Health-Promoting Lifestyle Profile loaded on similar factors, there was no relationship to the factor loadings of the Exercise of Self-Care Agency Scale

which indicated that the two tools measure different constructs.

Findings were presented in terms of both the quantitative and qualitative aspects of the study. Quantitative results, based on an established level of significance of .01 for the study, revealed a significant relationship between the criterion variable and the subscale predictor variables when tested by both Pearson r and Multiple R statistics. Further tests revealed a significant relationship between the criterion variable and the demographic variable of perceived health status. The multiple R statistic also revealed a significant relationship between the criterion variable and the demographic variable of occupation. Additionally, multiple regression stepwise testing revealed that the subscales of self-actualization, exercise, and nutrition were the most predictive of a high score on the Exercise of Self-Care Agency Scale.

Qualitative findings regarding perceived factors to have most influenced one's health further supported findings in the literature review that the Mennonite Brethren value a Christian lifestyle, good diet, and hard work. Although hard work is sometimes confused with exercise, this category was also reported. The results of

the content analysis further supported the quantitative findings of self-actualization, exercise, and nutrition as valuable predictor variables with Christian lifestyle, good diet, and hard work expressed (66%) most frequently.

In summary, the following major findings are notable:

1. Reliability for the sample ($N = 270$) was established at .8932 for the Exercise of Self-Care Agency Scale and at .9351 for the Health-Promoting Lifestyle Profile.

2. Construct validity was established with the use of factor analysis which indicated that the tools were independent measures which tested different constructs.

3. Pearson r and multiple R statistics were significant at the $< .001$ level for each measure between the criterion variable of exercise of self-care agency and the subscale predictor variables of health-promoting behaviors.

4. The Pearson r between the criterion variable of exercise of self-care agency and the demographic predictor variable of perceived health status was significant at the $< .01$ level.

5. The multiple R between the criterion variable of exercise of self-care agency and the demographic predictor variable of perceived health status was significant at the

< .01 level as was the multiple R between self-care agency and occupation.

6. Multiple regression stepwise results indicated that the subscales of self-actualization, exercise, and nutrition best predict approximately 67% of self-care potential and ability.

7. Content analysis results indicated that the concepts of Christian lifestyle, good diet, and hard work were reported approximately 66% most often as having had the greatest effect on health.

CHAPTER V

SUMMARY OF THE STUDY

This final chapter provides the interpretations from the results of the research study. A general summary is first presented followed by a discussion of findings based upon the hypotheses of the study. The problem statement and research question are addressed in terms of conclusions and implications of the study. Recommendations for further study are provided.

Summary

The literature was reviewed for relevant information on the nature of self-care agency and health promotion. Based upon the literature review, the theory of health embodiment was developed. Health embodiment was defined by the researcher as that relationship between the exercise of self-care agency and health-promoting behavior where the individual having the ability to perform self-care, actually engages in health-promotion behavior.

The purpose of the study was to determine the predictive value of a health embodiment theorem through the analysis of the relationship of health-promoting behaviors to self-care agency. The nature of the problem was a comparison of self-care agency with health-promoting

behaviors. A triangulated design was employed to explore this relationship. The criterion variable, self-care agency, was measured by the Exercise of Self-Care Agency Scale, and the predictor variables were measured by the Health-Promoting Lifestyle Profile.

The population was defined as the total number of elderly Mennonite Brethren identified as members in the General Conference of Mennonite Brethren Churches. The sample was derived from the population of elderly Mennonite Brethren known to be living in an area of Mennonite concentration found in south-central Kansas and was, therefore, a purposeful sampling technique. A sample of 445 individuals meeting the criteria of age and church membership and who were willing to participate, was achieved of 305 subjects. This represented a 69% response rate, although useable data resulted in 270 cases. The sample was representative in all areas of age, gender, marital status, education level, living status, occupation/profession, retirement status, and origin of membership.

The data were analyzed in two steps due to the triangulated design. Quantitative analysis incorporated the use of descriptive statistics, the Pearson Product Moment Correlation Coefficient statistic, and the multiple regression coefficient statistic. Further evaluation of

reliability and validity was established with the use of Cronbach's Coefficient Alpha and factor analysis. The demographic data were frequency analyzed to describe the sample. Qualitative analysis incorporated the use of content analysis.

Discussion of Findings

The discussion of findings is structured by presentation of the research hypotheses followed by analysis of the findings in light of the literature review. The research encompassed the following null hypotheses:

1. There is no significant relationship between health-promoting behaviors as measured by the subscales on the Health-Promoting Lifestyle Profile and exercise of self-care agency as measured by the total score on the Exercise of Self-Care Agency Scale in elderly Mennonites.

On analysis of the statistical findings related to this null hypothesis, it was found that based on an established level of significance of .01, the Pearson Product Moment Correlation Coefficient revealed a significant relationship ($p = < .001$) between each subscale on the Health-Promoting Lifestyle Profile and the total Exercise of Self-Care Agency Scale in this sample of 270 elderly Mennonite subjects. Furthermore, the multiple regression coefficient also revealed a significant

relationship ($p = < .001$) between each subscale as predictor variables and the total scale criterion variable.

In light of the review of literature, the significant relationship demonstrated between the criterion variable and the subscale predictor variable of self-actualization provides further support to Lantz's work. As discussed in the literature review, Lantz (1981) used a correlational design to explore the relationship between self-care agency and self-actualization. His findings among 366 elderly individuals indicated that a significant relationship does exist between self-actualizing concepts and self-care agency. No other studies were found in the review of literature regarding the further relationships demonstrated between self-care agency and the subscale predictor variables of health responsibility, exercise, nutrition, interpersonal support, and stress management.

2. There is no significant relationship between exercise of self-care agency as measured by the total score on the Exercise of Self-Care Agency Scale and selected demographic variables of elderly Mennonites.

Upon analysis of the statistical findings related to this null hypothesis, it was found that based on an established level of significance of .01, The Pearson Product Moment Correlation Coefficient revealed a

significant relationship ($p = < .01$) between exercise of self-care agency and perceived health status. The multiple regression coefficient also revealed a significant relationship ($p = < .001$) between exercise of self-care agency and perceived health status, and further indicated a significant relationship ($p = < .01$) between exercise of self-care agency and occupation/profession.

As addressed in the review of literature, a difference between the construct of exercise of self-care agency and the construct of perceived self-care agency exists. Moreover, the scope of this investigation was focused on exercise of self-care agency. However, upon analysis of the findings regarding the relationship between the criterion variable and the demographic predictor variables, a positive trend was found in the variable of perceived health status. Support of this finding can be found in the literature review where Kearney and Fleischer (1979) concluded that individuals who demonstrate a high degree of exercise of self-care agency also perceive themselves more positively. No other studies were found in the review of literature regarding the additional relationship demonstrated between self-care agency and the demographic predictor variable of occupation. Therefore, the statistical quantitative analysis used to test the

hypotheses leads to a rejection of the null hypotheses as indicated by the following alternative hypotheses:

1. There is a significant relationship between health-promoting behaviors as measured by the subscales on the Health-Promoting Lifestyle Profile and exercise of self-care agency as measured by the total score on the Exercise of Self-Care Agency Scale in elderly Mennonites.

2. There is a significant relationship between self-care agency as measured by the total score on the Exercise of Self-Care Agency Scale and selected demographic variables of elderly Mennonites.

Conclusions and Implications

The analysis supports the premise that a potential relationship exists between health-promoting behavior and the exercise of self-care agency that could be called health embodiment. Therefore, having addressed the problem statement the additional research question is of merit:

1. Is it possible to determine a health embodiment equation from the relationship, if any, between self-care agency and health-promotive behaviors?

Having established through the rejection of the null hypotheses that a relationship between the concepts exists, one moves on to the quantitative and qualitative aspects of the design which address this research question. The

notion that a health embodiment equation can result from the relationship between the concepts is demonstrated by the predictive value of the subscale variables identified by the multiple regression stepwise procedure. Together the variables of self-actualization, exercise, marital status, and nutrition best predict approximately 69% of the potential self-care ability.

Moreover, the results of content analysis qualitatively lend support to the value of a predictive equation where the subjects most frequently reported the effects of Christian lifestyle, nutrition, and hard work to have the greatest effect on health. The researcher questions whether Christian lifestyle as reported by the Mennonite elderly in the study is conceptually related to self-actualization. Furthermore, the researcher speculates that from the standpoint of the Mennonite elderly, the notion of hard work is related to exercise and perhaps self-actualization as well.

Thus, health embodiment is a multidimensional, dynamic attribute of an individual which orients to the future, includes active involvement by the individual, and relates to meaningful outcomes in terms of health promotion. Furthermore, based on the outcome of this research study, it can be concluded that a health embodiment equation is

attainable through exploration of the relationship between exercise of self-care agency and health-promotive behaviors.

Based upon the findings of the study, one can conclude that the proposed theoretical model has many implications for nursing and further appears to have prescriptive power. If the clinical phenomenon of health embodiment can be completely understood, practitioners could direct their attention to manipulating the stimuli that triggers the establishment of self-care agency and the development of health-promoting behaviors. The model, therefore, based upon this study, offers the potential for testing a relationship between specific nursing interventions and the attainment of health-embodiment. With a valid and reliable study to support the notion of health embodiment, further refinement and development of the theory can occur.

Recommendations for Further Study

The findings of the study provide support for the following recommendations:

1. There is a need for more theory building to further describe the phenomenon of health-embodiment.
2. A factor analysis conducted between the Exercise of Self-Care Agency Scale and the Health-Promoting

Lifestyle Profile in its entirety is recommended to further demonstrate construct validity.

3. Tool development is encouraged to specifically measure the phenomenon of health embodiment.

4. There is a need for investigation of the health embodiment phenomenon among different age groups to determine applicability or differences.

5. There is a need for investigation of the health embodiment phenomenon among other populations to determine cross-cultural applicability or differences.

6. Environmental factors affecting the health status of individuals might need to be included in the theory development of health embodiment.

7. The effect of perceived health status should be further explored and incorporated into the theory development of health embodiment.

8. The reported value of Christian lifestyle as affecting one's health should be further delineated.

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APPENDIX A

Approvals

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING

PROSPECTUS FOR DISSERTATION

This prospectus proposed by: Janice Dawn Unruh Davidson

_____ and entitled:

The Self-Care Agency and
Health-Promoting Behaviors of Elderly Mennonites

Has been read and approved by the members of (his/hers) Research
Committee.

This research is (check one):

_____ Is exempt from Human Subjects Review Committee review

because _____

_____ XXX Requires Human Subjects Review Committee review

because ages, names and addresses of the elderly

subjects must be obtained by the researcher.

Research Committee:

Chairperson	<u>Helen L. Bush</u>
Member	<u>Lynn J. Daps</u>
Member	<u>Carol G. Jordan</u>
Member	<u>Margie M. Johnson</u>
Member	<u>Nicholas J. Kels</u>

11/23/87

TEXAS WOMAN'S UNIVERSITY
P.O. Box 22939, TWU Station
OFFICE OF RESEARCH AND GRANTS ADMINISTRATION
DENTON, TEXAS 76204

HUMAN SUBJECTS REVIEW COMMITTEE

Name of Investigator: Janice Dawn Unruh Davidson Center: DentonAddress: 1321 Mullins Drive Date: _____Plano, TX 75023Dear Janice Davidson

Your study entitled The Self-Care Agency and Health-Promoting
Behaviors of Elderly Mennonites

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

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

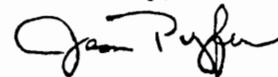
Special provisions pertaining to your study are noted below:

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

Other:

No special provisions apply.

Sincerely,



Chairman
Human Subjects Review
Committee at Denton

cc: Graduate School
Project Director
Director of School or
Chairman of Department

(Verbal approval
received 12/14/87)

10/1/87

TEXAS WOMAN'S UNIVERSITY
DENTON DALLAS HOUSTON
THE GRADUATE SCHOOL
P.O. Box 22479, Denton, Texas 76204 817/898-3400, 800-338-5255



February 3, 1988

Ms. Janice Davidson
1321 Mullins Dr.
Plano, TX 75023

Dear Ms. Davidson:

Thank you for providing the materials necessary for the final approval of your prospectus in the Graduate Office. I am please to approve the prospectus, and I look forward to seeing the results of your study.

If I can be of further assistance, please let me know.

Sincerely yours,

Leslie M. Thompson
Leslie M. Thompson
Dean

dl

cc Dr. Virginia Smith
Dr. Anne Gudmundsen

(Verbal approval received 12/14/87)

APPENDIX B
Questionnaire Packet

Letter to Subjects

Hello, my name is Janice Unruh Davidson. You may know me, I grew up in the First Mennonite Brethren Church of Wichita, Kansas, and attended Tabor College. My parents are LaVurne J. and Marsha Unruh also of Wichita, and my grandparents are the late Jacob J. and Tina Schroeder Unruh of Buhler and Hillsboro.

I am currently pursuing a doctorate in nursing at Texas Woman's University in Denton, Texas. I have always been interested in the Mennonite Brethren heritage and, as a nurse, the health care practices of the Mennonite people. I am, therefore, writing to request your participation in my research study regarding the health practices of Mennonite Brethren.

If you decide to participate, please understand that your responses will be treated with confidentiality and respect. The code appearing in the upper-right hand corner of the questionnaire packet will be used for follow-up purposes only. Individuals will not be identified or be associated with individual remarks. In order to maintain anonymity, I ask that you not place your name anywhere on the questionnaire packet.

The questions should only take 15 to 30 minutes for you to complete and may be returned to me in the enclosed

postage-paid envelope. I appreciate your consideration in helping me with my research work, and thank you for your participation should you decide to do so.

COMPLETION AND RETURN OF THIS QUESTIONNAIRE PACKET IS
CONSTRUED AS INFORMED CONSENT

Demographic Data Sheet

Please complete the following questions for research data purposes. Thank you for your participation in completing this questionnaire packet.

1. Age: _____
2. Sex: _____
3. Marital Status: _____
4. Highest Grade/Degree Completed: _____
5. Where and with whom do you live: _____
6. Primary life profession/occupation: _____
7. Are you retired from the above profession/occupation?

8. How did you come to be a member of the Mennonite Brethren Church? (Birth or Transfer) _____
9. How do you perceive your current health condition to be? _____
10. What do you perceive to have had the greatest affect upon your health? _____

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

	NEVER	SOMETIMES	OFTEN	ROUTINELY
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" food 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. Attend 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

SELF-CARE AGENCY SCALE

DIRECTIONS: This is not a test with right or wrong answers. It is an instrument which helps you assess yourself in terms of the degree in which you take care of your health needs. You will be given a statement, followed by five possible choices. Circle the letter which best describes you from letter A (very characteristic) through letter E (very uncharacteristic), as follows:

A very characteristic	B somewhat characteristic	C no opinion	D somewhat uncharacteristic	E very uncharacteristic
1.	I would gladly give up some of my set ways if it meant improving my health.			A B C D E
2.	I like myself.			A B C D E
3.	I often feel that I lack the energy to care for my health needs the way I would like to.			A B C D E
4.	I know how to get the facts I need when my health feels weakened.			A B C D E
5.	I take pride in doing the things I need to do in order to remain healthy.			A B C D E
6.	I tend to neglect my personal needs.			A B C D E
7.	I know my strong and weak points.			A B C D E
8.	I seek help when unable to care for myself.			A B C D E
9.	I enjoy starting new projects.			A B C D E
10.	I often put off doing things that I know would be good for me.			A B C D E
11.	I usually try home remedies that have worked in the past rather than going to see a doctor or nurse for help.			A B C D E
12.	I make my own decisions.			A B C D E
13.	I perform certain activities to keep from getting sick.			A B C D E
14.	I strive to better myself.			A B C D E
15.	I eat a balanced diet.			A B C D E
16.	I complain a lot about the things that bother me without doing much about them.			A B C D E
17.	I look for better ways to look after my health.			A B C D E
18.	I expect to reach my peak wellness.			A B C D E

	A very characteristic	B somewhat characteristic	C no opinion	D somewhat uncharacteristic	E very uncharacteristic
19. When I have a problem, I usually want an expert to tell me what to do.					A B C D E
20. I deserve all the time and care it takes to maintain my health.					A B C D E
21. I follow through on my decisions.					A B C D E
22. I have no interest in learning about my body and how it functions.					A B C D E
23. If I am not good to myself, I believe I can not be good for anyone else.					A B C D E
24. I understand my body and how it functions.					A B C D E
25. I rarely carry out the resolutions I make concerning my health.					A B C D E
26. I am a good friend to myself.					A B C D E
27. I take good care of myself.					A B C D E
28. Health promotion is a chance thing for me.					A B C D E
29. I have a planned program for rest and exercise.					A B C D E
30. I am interested in learning about various disease processes and how they affect me.					A B C D E
31. Life is a joy.					A B C D E
32. I do not contribute to my family's functioning.					A B C D E
33. I take responsibility for my own actions.					A B C D E
34. I have little to contribute to others.					A B C D E
35. I can usually tell that I am coming down with something days before I get sick.					A B C D E
36. Over the years I have noticed the things to do that make me feel better.					A B C D E
37. I know what foods to eat to keep me healthy.					A B C D E
38. I am interested in learning all that I can about my body and the way it functions.					A B C D E
39. Sometimes when I feel sick I ignore the feelings and hope it goes away.					A B C D E

- | | A | B | C | D | E |
|-----|--|----------------|---------|------------------|------------------|
| | very | somewhat | no | somewhat | very |
| | characteristic | characteristic | opinion | uncharacteristic | uncharacteristic |
| 40. | I seek information to care for myself. | | | | A B C D E |
| 41. | I feel I am a valuable member of my family. | | | | A B C D E |
| 42. | I remember when I had my last health check and return on time for my next one. | | | | A B C D E |
| 43. | I understand myself and my needs pretty well. | | | | A B C D E |

APPENDIX C
Correspondence

1321 Mullins Drive
Flano, Texas 75023
July 21, 1987

Ms. Barbara Y. Kearney
Route 5, Box 151
Covington, Louisiana 70433

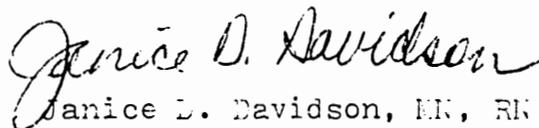
Dear Ms. Kearney:

While reviewing the literature on self-care agency, I was pleased to locate your article, "Development of an Instrument to Measure Exercise of Self-Care Agency" in the Journal of Research in Nursing and Health. I am currently a doctoral student at Texas Woman's University and writing my dissertation proposal. The tentative title for my proposal is "The Relationship Between Self-Care Agency and Health-Promotion Behavior of Elderly Mennonite Brethren." I am of the opinion that your tool could be appropriately utilized in this study.

Would you consider granting approval for the use of your tool and could you supply any additional information not covered in the article such as component and total calculation methods? Any assistance you could provide would be greatly appreciated. As a student, my project is a non-profit educational endeavor and no profit will accrue to anyone.

Thank you for your consideration of my request. If you have need for any more information, please write me at the above address.

Sincerely,


Janice D. Davidson, MN, RN

cc

1321 Mullins Drive
Plano, Texas 75023
July 21, 1987

Ms. Susan Noble Walker
Health Promotion Research Program
School of Nursing, Northern Illinois University
DeKalb, Illinois 60115

Dear Ms. Walker:

While reviewing the literature on health-promotion behavior, I was pleased to locate your article, "The Health-Promoting Lifestyle Profile: Development and Psychometric Characteristics" in Nursing Research. I am currently a doctoral student at Texas Woman's University and writing my dissertation proposal. The tentative title for my proposal is "The Relationship Between Self-Care Agency and Health-Promotion Behavior of Elderly Mennonite Brethren." I am of the opinion that your tool could be appropriately utilized in this study.

Would you consider granting approval for the use of your tool and could you supply any additional information not covered in the article such as component and total calculation methods? Any assistance you could provide would be greatly appreciated. As a student, my project is a non-profit educational endeavor and no profit will accrue to anyone.

Thank you for your consideration of my request. If you have need for any more information, please write me at the above address.

Sincerely,

Janice D. Davidson
Janice D. Davidson, MN, RN

cc

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

August 14, 1987

Janice D. Davidson, M.N., R.N.
1321 Mullins Drive
Plano, TX 75023

Dear Ms. Davidson:

I am pleased to respond to your request for information about our Health-Promoting Lifestyle Profile. I am enclosing a copy of the 48-item instrument and scoring instructions.

If, after evaluating the enclosed materials, you decide that you would like to use the Lifestyle Profile in your research, we would ask that you seek specific permission which provides detailed information about the nature of your proposed study. There would be no charge for approved research use, but we would require that you be willing to share a copy of your results with us. If I can answer any additional questions about the instrument, I would be pleased to do so.

Thank you for your interest in our work.

Sincerely,



Susan Noble Walker, Ed.D., R.N.
Associate Professor and
Director, Older Adult Project

Encl.

Rt 5 Box 151
Covington, LA 70433
October 13, 1987

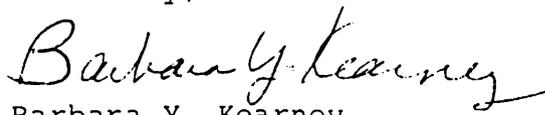
Ms. Janice D. Davidson, M.N., R.N.
Texas Woman's University
College of Nursing
P.O. BOX 23026
TWU Station
Denton, Texas 76204

Dear Ms. Davidson:

Barbara Fleischer and I are delighted that you are interested in using the "Exercise of Self-Care Aging Tool." Enclosed is a sample scored copy of the tool. We would appreciate you sharing the results of your study with us.

If you have any other questions, please contact me. My home phone number is (504) 892-6986.

Sincerely,


Barbara Y. Kearney

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

November 24, 1987

Janice D. Davidson, M.N., R.N.
1321 Mullins Drive
Plano, Texas 75023

Dear Janice:

You have our permission to use the 48-item Health-Promoting Lifestyle Profile in your study of the relationship between self-care agency and health-promoting behaviors of elderly Mennonite Brethren. You may have copies made from the form which I sent previously. Content should not be altered in any way and the copyright/permission statement at the end must be reproduced.

We 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 it is possible to share a copy of your dissertation, that would indeed be helpful.

I enjoyed talking with you today and will send you my comments on your proposal next week. Best wishes with your study.

Sincerely,

Susan Noble Walker 

Susan Noble Walker, Ed.D., R.N.
Associate Professor and
Director, Older Adult Project

1321 Mullins Drive
Plano, Texas 75023
December 14, 1987

Dear Mennonite Brethren Pastor:

I am writing to request information for a research study I am conducting to complete a Ph.D. in nursing. You may remember me from several years ago when I was conducting research in your community to complete my Master of Nursing thesis.

What I will need from your church records is the names, addresses and dates of birth of all your members who are 65 years of age or older as of this date. I will then send each of them an introductory letter which I have included for your review, and a questionnaire about their health practices. My plan is to send these letters out as soon as I receive your information in the mail.

I would appreciate your assistance in providing this information. If you have any questions about my study, or are interested in a copy of the results, please feel free to contact me. My home phone is 214-517-8486. Thank you for your time and consideration in my request for assistance.

Respectfully yours,

Janice Unruh Davidson
Doctoral Candidate
Texas Woman's University

cc

January 23, 1988

Dear Mennonite Brethren Church Member,

Several weeks ago you were mailed a questionnaire regarding your health care habits. I am writing to follow-up on the progress of the questionnaire and ask that if you intend to participate, please return the form by February 5. If you have need for additional forms or information, please feel free to call me collect at 214/517-8486.

Thank you for your consideration of my request for assistance in my doctoral research.

Respectfully yours,

Janice Unruh Davidson
1321 Mullins
Plano, TX 75023