THE RELATIONSHIP BETWEEN DEFINITION OF HEALTH AND HEALTH-PROMOTING BEHAVIORS OF OLDER ADULTS PARTICIPATING IN FITNESS FACILITIES/PROGRAMS

by

Kimberley Hogg

A thesis

submitted to the University of Manitoba

in partial fulfillment of the

requirements for the degree of

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Abstract

The purpose of this study was to explore the relationship between definition of health and health-promoting behaviors in a group of older adults, namely, those older adults participating in fitness facilities/programs. It has been suggested in the literature that definition of health may be an important factor in health behaviors.

The study design is a descriptive correlational design. The Laffrey Health Conception Scale (Laffrey, 1986), the Health-Promoting Lifestyle Profile (Walker, Sechrist, & Pender, 1987), and a demographic form were used to determine the older adults' definition of health, health-promoting behaviors, and demographic characteristics. Descriptive statistics, Pearson correlation coefficients, and partial correlations were used in the data analysis.

The results indicated that this sample of older adults perceived a multidimensional definition of health. Of the sample demographic characteristics, only marital status was significantly correlated with definition of health. The results also showed that these older adults reported participation in a range of actual health-promoting behaviors. Being older was positively correlated with behaviors representing interpersonal support, while having

more education was inversely correlated with behaviors representing stress management. Three dimensions of health were correlated with two dimensions of health-promoting behaviors. Only a small percentage of the variance in health-promoting behaviors was accounted for by the statistically significant correlations found in the study. Based on the findings from this study, there is some indication that health definition may have limited clinical significance as a factor in health-promoting behaviors.

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Chapter 1. Statement of the Problem

Interest in personal health behavior has increased in recent years among policy makers, health professionals, and the general public. It is one consequence of Lalonde's Health Field Concept (Lalonde, 1974) which served to elevate human biology, environment, and lifestyle to a level of importance equal to that of health care organization. The interest in health behavior is also supported by a growing body of evidence that links individual behavior to positive health outcomes. Research has demonstrated a positive correlation between health behavior practices and physical health status (Belloc & Breslow, 1972; Breslow, 1972; Palmore, 1970; Reed, 1983; Stenback, Kumpulainen, & Vauhkonen, 1978; Wiley & Camacho, 1980; Wilson & Elinson, 1981) and longevity in adults (Belloc, 1973; Breslow & Enstrom, 1980; Kaplan, Seeman, Cohen, Knudsen, & Guralnik, 1987; Palmore, 1970; Rotevatn, Akslen, & Bjelke, 1989).

It is frequently argued that with lower rates of morbidity and/or mortality one can expect reduced health care use and lowered health care costs (Bennett & Krasny, 1977; Rachlis & Kushner, 1989). Unfortunately, it is difficult to assess accurately the economic impact of positive health behaviors and, therefore, this potential

benefit remains open to conjecture (Evans, 1984; Higgins, 1988). Nevertheless, a need to contain health care costs has helped to focus attention on personal health behaviors.

While gains in longevity are important, consideration is now also being given to quality of life. It is clear that increased attention has been placed on health behaviors as one way to help individuals maintain vigor and good physical functioning (Gilbert, 1986; Tager, 1981; Verbrugge, 1984).

As the elderly population (aged 65 and older) increases at an unprecedented rate, to an estimated 21 percent of the Canadian population by the year 2031 (Statistics Canada, 1984), greater attention to the health and social needs of this population will be needed. A focus on older Canadians is timely. The baby-boom generation has now approached middle age. Older members of the baby-boom population will reach 65 years of age in 2011. When it is recalled that a person reaching age 65 has, on average, 10 to 20 years of life remaining (Statistics Canada, 1984), the importance of extending health-promoting concerns to this age group is underscored (Minkler & Pasick, 1986; Moyer, 1981; Pender, 1987). Attention is turning toward quality of life in addition to longevity. The exclusion of elderly people as a focus of concern in health-promoting efforts ignores the potential for positive outcomes in this age group (Gelein,

1983; Gilbert, 1986; Kee, 1984; Minkler & Pasick, 1986; Moyer, 1981; Walker, Volkan, Sechrist, & Pender, 1988).

The Health Promotion Survey (Health & Welfare Canada, 1988) found that despite higher rates of reported health problems among the elderly population, three out of four elderly people (aged 55 and older) reported that their health is good, very good, or excellent for their age. Similar results have been found in other studies (LaRue, Bank, Jarvik, & Hetland, 1979; Linn & Linn, 1980; Minkler, 1978; Stoller, 1984). To some extent, these results are inconsistent with traditional expectations and images of aging (Health & Welfare Canada, 1989). The discrepancy between older people's perception of their health and the vital statistics on health in old age, such as the incidence of chronic diseases, suggests that health is being evaluated in different ways (Gelein, 1983). In order to enable older people to enhance health according to their individual needs, an understanding of their health beliefs and behavior appears essential.

There is confusion and conflict in the literature about the definition of health. Only a handful of studies have actually examined lay concepts of health and their correlates. In particular, there is limited knowledge about the older adult's conception of health. Some investigators

suggest that conceptions of health be refined and broadened to have greater relevance to the elderly (Colantonio, 1988; Minkler & Pasick, 1986). Accordingly, Colantonio (1988) and others (Minkler & Pasick, 1986) maintain that health should be defined as the ability to live and function effectively in society, to exercise self-reliance and autonomy to the maximum extent feasible, but not necessarily as total freedom from disease. Because the elderly population is such a heterogeneous group they may not share this same functional definition of health. Further study is needed to explore older persons' definition of health.

It has been suggested in the literature that the definition of health to which individuals subscribe may influence the extent to which they engage in health behaviors (Calnan & Johnson, 1985; Laffrey, 1986, 1990; Pender, 1987). In addition, Pender (1987) proposes that differences in definitions of health should result in differing patterns of health behaviors. The relationship between an older person's definition of health and his or her behavior needs to be clarified. Although an increasing number of studies are examining the personal health behaviors of older adults, relatively little is known about the most important psycho-social correlates of health behavior in this population. In order to assist older people

in developing positive health behaviors, it seems imperative to know more about potential psycho-social influences such as definitions of health.

Effective gerontological program development is limited by gaps in knowledge about the health behavior of older people (Dean, Hickey, & Holstein, 1986). Most of the research on health behaviors has been done within a preventive framework and has focused on a limited number of behaviors such as the seven practices studied by Belloc and Breslow (1972). Also, despite the growing awareness of the relationship between health behavior practices and physical well-being, little is known about the frequency of such behaviors in older adults, or the factors that sustain these behaviors in late life.

Eighty percent of people over age 65 report at least one health problem (Health & Welfare Canada, 1989). By focusing research narrowly on disease avoidance behaviors or prevention (Pender, 1987), one may fail to address the health-promoting needs of the older adult. The consequences may be passive or palliative health maintenance and treatment approaches, rather than health-promoting daily routines for older adults. A health promotion framework which encompasses a positive approach to living seems more

relevant for older adults, yet relatively little is known about this population's health-promoting behavior patterns.

According to Dean, Hickey, and Holstein (1986), research in aging must shift from problem-centered approaches and pathology models to approaches which identify the factors influencing health and health-related behaviors. The elderly themselves, in the Health Promotion Survey (Health & Welfare Canada, 1988), have provided a view of their health which is not based on problems. They have indicated that good health is not the exception for their age, but the norm. They have also indicated that health is an important factor in their subjective well-being (Larson, 1978). In light of this view, studies documenting the health-promoting behaviors of older adults and the factors related to those behaviors must also be given priority.

Purpose of the Study

The purpose of this study is to explore the relationship between definition of health and health-promoting behaviors in a group of older adults. The study explored the relationship between these two concepts in older adults participating in fitness facilities/programs.

Clarifying the older person's definition of health may be an important step in assessing the older adult's health-promoting behavior. Many researchers have measured perceived health status and health behaviors in the elderly but few have studied definition of health and its relationship to health-promoting behavior.

The specific research questions addressed in this study were the following:

1. What is the definition of health perceived by older adults participating in fitness facilities/programs?

2. What is the relationship between demographic characteristics and definition of health for older adults participating in fitness facilities/programs?

3. What are the health-promoting behaviors of older adults participating in fitness facilities/programs?

4. What is the relationship between demographic characteristics and health-promoting behaviors of older adults participating in fitness facilities/programs?

5. What is the relationship between definition of health and health-promoting behaviors of older adults participating in fitness facilities/programs?

Quantitative analysis was used to examine the research questions. Definition of health and health-promoting behaviors were defined in this study as follows:

Definition of health - the personal meaning of health for the individual, as measured by the score on the Laffrey Health Conception Scale (LHCS). Four dimensions of health are included in the scale: clinical, role performance/functional, adaptive, and eudaimonistic. Definition of health, concept of health, health conception, and meaning of health are used interchangeably in this study, as reflected in the literature.

Health-promoting behavior - activities that serve to maintain or enhance the level of wellness, self-actualization, and fulfillment of the individual, as measured by the score on the Health-Promoting Lifestyle Profile (HPLP).

Significance of the Study

Promoting health among individuals, families, groups, and communities is a fundamental concern of nursing. In recent years, health and health behaviors have received increased attention from researchers. However, given the gaps in knowledge about concepts of health, and health behavior and functioning of older people, more attention is needed. With the expected increase in the number of individuals over 65 years of age in the following decades, promoting health in this age group will be a challenge.

Health-promoting initiatives, to be effective, must build on the existing knowledge, beliefs, and competencies of the older adult (Dean, Hickey, & Holstein, 1986). Therefore, it appears critical to take into account older adults' definition of health as a prerequisite for effective health communications. In addition, because of the heterogeneity of the older population, an examination of health-promoting behaviors in various sub-groups of this population is essential. This study will contribute to nursing knowledge about health and aging by exploring the relationship between definition of health and health-promoting behaviors of older adults participating in fitness facilities/programs.

Further research is required in order to improve our understanding of psycho-social influences on older adults' health behavior. It has been suggested in the literature that knowledge of health conception across population groups may increase the ability to understand and predict other health-related variables such as health behavior (Laffrey, 1986; Pender, 1987). Until we know more about the factors contributing to healthful patterns of behavior or their most important correlates, the ability to develop intervention strategies will be limited (Mechanic, 1979). It would be advantageous for health professionals to know the variables associated with the health-promoting behaviors of older individuals.

Public policy and programs alone cannot realize the goal of assisting older adults to enhance vigor and good physical functioning. Older adults must also have positive health attitudes and behavior. Insofar as health-promoting programs aim to improve health by influencing the actions of individuals, an understanding of health beliefs and behavior is critical (Health & Welfare Canada, 1989). This study will add to the knowledge in this complex but important area.

Chapter 2. Review of the Literature

This literature review is directed towards the two major concepts of this study, namely, definition of health, and health-promoting behaviors. Literature is explored in terms of the various conceptions of health, older adults' perceived health status, and health behavior and its correlates. In order to provide a comprehensive background on the two concepts, relevant research in Medicine, Psychology, Sociology, Philosophy, Gerontology, and Nursing was reviewed. In integrating and discussing the findings, a diversity of results and claims based on the research are noted.

Definitions of Health

Health, a major concept, has not received a consistent or agreed upon definition (Baranowski, 1981; Keller, 1981; King, 1990; Laffrey, 1986; Morse, 1987; Tripp-Reimer, 1984; Winstead-Fry, 1980). Confusion reigns relative to the meaning of the word health. Many writers postulate on the reasons for this confusion. Dolfman (1973) suggests the versatility of the word, health, leads to ambiguity and vagueness. Health is a word which has been used to express a certain concept, such as "a state or condition of well-

being." But it fails to provide sufficient specificity and accuracy. Schlenger (1976) sees the attempt to force unidimensionality on to the phenomenon of health as the primary cause of confusion. Health has come to refer to a number of different dimensions (Dolfman, 1974; Pender, 1984). Some of the difficulties, then, in defining health are: (a) it is a value judgement (Boorse, 1977; Dubos, 1965); (b) it is a subjective state (Dubos, 1965; Kass, 1975); (c) it is an abstraction difficult to operationalize (Dubos, 1965; Siegel, 1973); (d) it is a relative concept (Dubos, 1965; Kass, 1975; Siegel, 1973); (e) it is culturally determined (Dubos, 1965; Idler, 1979; Moravcsik, 1976).

The concept of health lies at the crossroads of what we do, what we are, and what we would like to be (Moravcsik, 1976). The concept of health which prevails in a society is important both in theory and in practice. It forms the basis for understanding the phenomenon of health and influences what people do individually and collectively to advance health (Breslow, 1972). Dolfman (1973) attempts to alleviate some of the confusion surrounding the meaning of health by presenting an historical examination of the concept.

Past and Present Concepts of Health

The word health first appeared around 1000 A.D. (Dolfman, 1973). Wholeness was an integral characteristic of its origin and historical development. Although other definitions have attempted to refine this notion, health as soundness or wholeness of body has been used and accepted for as long as the word health has existed (Dolfman, 1973). According to Dolfman (1973), the present ambiguity associated with the meaning of the word health can be traced to the modern period of its development. With the spread of mechanistic thinking, the popular conception of health as a disease-free state emerged (Payne, 1983). Thus health and disease were considered polar opposites with the absence of one defining the presence of the other (Burns, 1976; Lewis, 1953; Payne, 1983; Redlich, 1976; Tillich, 1961). The most prominent advocates of this perspective were medical physicians. The focus centered on the disease end of the continuum. This focus on disease probably occurred because for most of human existence the health problem facing society has been overcoming disease (Breslow, 1972). While this notion that health is a disease-free state was popular during the first half of the 20th century, by the mid-20th century the health picture had changed. As a whole, people

were not disease-ridden and new positive conceptualizations of health emerged (Breslow, 1972; Dolfman, 1973).

In 1947, the World Health Organization defined health in a new way; "health is a state of complete physical, mental and social well-being, and not merely the absence of disease and infirmity" (W.H.O., 1947). This definition marked a positive conception of health, viewing health as the possession of distinct positive qualities instead of the absence of anything. However, this definition of health is not without criticism. Criticisms have focused on its abstractness and lack of suitability for empirical testing (Kottow, 1980; Wylie, 1970). Other writers describe the concept as utopian and impossible to achieve (Dubos, 1965; Hoke, 1968); a concept that is not discoverable but only advocable (Boorse, 1977). According to Hoke (1968), this positive definition of health makes health a constant state of complete harmony, which is a mirage or an unattainable ideal in our constantly changing world. In addition, it implies the exclusion of disease, infirmity, or any kind of defect in structure and function before speaking about a state of health (Bonnevie, 1973; Wylie, 1970). One might ask how relevant this definition is to the elderly population, since many elderly people are not totally free from symptoms or some type of infirmity.

Another modern conceptualization views health as a state or condition which enables individuals to fulfill their roles. More specifically, health is defined as the optimum capacity of an individual to fulfill personal expectations and perform social role tasks (Baranowski, 1981; Parsons, 1972). It is, therefore, defined with reference to the person's participation in the social system. Parsons (1972) considered that health and illness would vary as a function of social and cultural conditions. As a result, the notion of what is health may be interpreted differently by various cultural groups. Dubos (1965) and Baranowski (1981) go further by stating that concepts of health are specific to particular societies, cultural groups, institutional groupings, and physical environments. For this reason, health may best be defined by a given person functioning in a given physical and social environment.

Health has also been conceptualized as adaptation. The adaptive idea of health refers to the state of effective and fruitful interaction of individuals with their constantly changing natural and social environments (Dubos, 1965; Kovacs, 1989). Individuals attempt to achieve a favorable equilibrium with their environment, and their health may be judged by their ability to accommodate and adjust to the various strains and tensions they face. The nearest approach

to health is a physical and mental state reasonably free of pain and discomfort, which allows a person to function as effectively as possible in the environment (Dubos, 1965).

Equating health with normality is another modern conception. Health constitutes a standard of adequacy relative to capacities, feeling states, and biological functioning needed for the performance of social roles (Kass, 1975; Twaddle, 1974). If results fall within predetermined ranges for the particular person's age and sex, the individual is deemed healthy (Twaddle, 1974). For physiological medicine, health as freedom from disease is then statistical normality of function (Boorse, 1977).

A further concept that has emerged equates health with a positive lifestyle. Health is viewed as each person being a unique combination and integration of physical, mental, emotional, and spiritual dimensions of aliveness (Berg, 1975; Schlosser, 1977; Winstead-Fry, 1980). Within this view health is a product of one's total way of living. This conceptualization expands the notion of health to include a quality of life (Berg, 1975; W.H.O., 1986). Also, encompassed in this perspective is a philosophic view of health emphasizing the realization of potentials and creative self-actualization (Ardell, 1979; Pender, 1987, 1990; Schlenger, 1976; Schlosser, 1977; Simmons, 1989).

This conceptualization builds on the work of Dunn (1959), who introduced the concept of high-level wellness. This concept takes into consideration the whole person and his or her environment. In other words, good health is a continual process that can evolve into wellness (Bruhn, Cordova, Williams, & Fuentes, 1977; Dunn, 1959). Hoke (1968) and Parse (1990) hold a similar view by describing the phenomenon of health as a living activity, not a product. Health is regarded as a way of responding to the total environment and is observable as a behavioral process.

The World Health Organization (1984, 1986) recently expanded its vision of health. Health is now seen as a resource for everyday life, not the objective of living. Health is a positive concept emphasizing physical capacities, personal and social resources (W.H.O., 1984, 1986). Improving health requires a secure foundation in the basic resources of income, shelter, and food (Hoke, 1968; W.H.O., 1984). Based on this expanded vision of health, promoting lifestyles conducive to health involves consideration of personal coping strategies as well as beliefs and values about health. All of these factors are shaped by lifelong experiences and living conditions (W.H.O., 1984). As a result, one might expect varying

notions of health depending on the values and aspirations of each sub-group or individual in society.

From this examination of health concepts in the literature, it appears that health is a complex concept with physiological, psychological, social, spiritual, and environmental dimensions. There is little agreement in the professional literature about the meaning of health. Health has been variously defined as absence of disease; complete physical, mental, and social well-being; performance of social roles and tasks; adaptation to changing natural and social environments; normality; an holistic process emphasizing actualization of human potential; and a resource for everyday life. As individual and social values change, it may be expected that the meaning of the word health will change. Possibly the word health cannot be defined universally but it may be defined diversely or within sub-groups.

Lay Concepts of Health

There is interest in the lay person's concept of health. Some investigators suggest that professionals and lay people may not share the same ideas concerning health (Colantonio, 1988; Laffrey, 1986; Morse, 1987; Tripp-Reimer, 1984). Thus, it would appear important to take into account lay concepts

of health. However, only a handful of studies have actually investigated how lay people define health.

Baumann (1961), in an American study, asked 201 clinic patients and 262 medical students what they thought most people mean when they say they are in good health. Three major orientations were identified: (a) feeling state, represented by statements about a general feeling of well-being; (b) symptom, represented by statements about absence of symptoms of disease; and (c) performance, represented by statements about what a person should be able to do (Baumann, 1961). The responses made by both groups were multidimensional; that is, responses were from more than one category. The notion presented by these two groups was that health is a multidimensional concept that includes more than the absence of disease. Similar findings were reported in a more recent study by Boyle and Counts (1988); a sample of community adults in West Virginia responded to interview questions that elicited their beliefs and perceptions about being healthy.

Interesting similarities and differences in health conceptions are seen in different cultures. Williams (1983) studied the concepts of health used by elderly Aberdonians (aged 60 and older) and compared them with the concepts elicited from interviews with middle-aged Parisians by

Herzlich (1973). Health as "not illness" in Paris is paralleled in Aberdeen by a general usage of health as the relative absence of disease. Health as a reserve of strength in Paris is contrasted in Aberdeen as a continuum of strength, local weakness and total exhaustion. Thirdly, health as an equilibrium with one's way of life in Paris is paralleled in Aberdeen as functional fitness (Williams, 1983). Williams (1983) suggests that cultural conceptions of a similar kind are involved here despite differences in age and nationality.

Using a phenomenological approach, Parse and colleagues (1985) studied the lived experience of health based on participants' written descriptions of a personal situation in which a feeling of health was experienced. Participants were asked to share their thoughts, perceptions, and feelings about the situation. For those adults over 65 years of age, 173 descriptive expressions reflected three common elements that Parse labelled: transcendent vitality, generating completeness, and synchronous contemplation. The definitions of health identified are different from those generally found in the literature. They reflect the researcher's perspective on health. Nevertheless, the descriptive expressions leading to the specific common elements are familiar: (a) feeling of aliveness, (b) vibrant

and full of zip, (c) being able to perform my duties, (d) participating in productive activity, (e) freedom from worry, and (f) being all right (Parse, Coyne, & Smith, 1985).

Several health themes were reported in a study conducted by d'Houtaud and Field (1984) in northeast France. A sample of 4000 adult participants responded to an open-ended question on what health meant to them. Ten dominating themes emerged: (a) hedonistic use of life, (b) equilibrium, (c) reference to the body, (d) vitality, (e) psychological well-being, (f) hygiene, (g) value of health, (h) prevention, (i) physical aptitudes, (j) absence of sickness (d'Houtaud & Field, 1984). The greater depth of data provided in this study as compared to Herzlich's (1973) investigation is attributed to the larger sample size, 4000 respondents versus 80 respondents, and the inclusion of all social classes. The greater depth of data may also be attributed to the specific open-ended question used to explore the definition of health. Furthermore, d'Houtaud and Field (1984) investigated the meaning of health only, whereas, Herzlich (1973) and Williams (1983) investigated both health and illness together. The emphasis on health may be the reason for the few themes evoking the image of illness found in the d'Houtaud and Field (1984) study.

Half the health-related themes appearing in the d'Houtaud and Field (1984) study did not appear in a study conducted by Colantonio (1988) in London. One hundred subjects were interviewed to reveal seven major response categories describing health: being fit, feeling well, not being ill, good health behaviors, looking well, and good environment (Colantonio, 1988). Again, there is support for health as a multidimensional concept that includes more than the absence of illness.

Research into lay conceptions of health was conducted in a neighborhood in the center of a Canadian city (Morse, 1987). Three broad themes were identified: (a) health attributed to both physical and mental parameters; (b) health was either physical or mental dimensions; (c) physical and mental parameters of health were separate (Morse, 1987). A mind/body definition of health was also reported in a study of nursing students (Hanna, 1989). Interestingly, Morse (1987) found that subjects who defined health in physiological parameters were experiencing chronic or acute illnesses or diseases. In contrast, those subjects who defined health in psychological parameters reported that they did not have acute/chronic disease. The findings suggest there may be a relationship between one's definition of health and one's own physical health status.

That lay definitions of health may differ from professional definitions in the literature has been suggested by some writers (Colantonio, 1988; Laffrey, 1986; Morse, 1987; Tripp-Reimer, 1984). Morse (1987) compared lay concepts of health with Keller's (1981) categories of health definitions found in the professional literature. The comparison showed commonalities within broad biological, psychological, and holistic dimensions. However, aspects of health included in the lay concepts were nutrition, sleep, exercise, and work (Morse, 1987). These findings were also supported in other studies (Colantonio, 1988; d'Houtaud & Field, 1984; Woods et al., 1988). These activities may be seen as a means to health by professionals, but they are presented as indicators of health by lay subjects.

Psycho-social correlates of lay health concepts.

Baumann (1961) found the relative emphasis an individual placed on a particular dimension of health to be affected by various factors: age, education, social class, religious affiliation, and current physical condition. However, in other studies the same factors have not been found, except for social class (Calnan & Johnson, 1985; d'Houtaud & Field, 1984; Woods et al., 1988) and physical health status (Morse, 1987). Colantonio (1988) found no significant differences in

health concepts between older and younger age groups or between sexes.

It has been suggested that socially disadvantaged groups may be more likely to define health in negative terms, such as the absence of illness which seriously disrupts necessary activities (Baumann, 1961; Calnan & Johnson, 1985; d'Houtaud & Field, 1984). D'Houtaud and Field (1984) found socioeconomic class position of the respondents to be the most discriminating variable in the health conception responses. There was a gradient from the higher to the lower socioeconomic classes, the former conceiving health more in positive and expressive terms, and the latter more in negative and instrumental terms (d'Houtaud & Field, 1984). On the other hand, Calnan and Johnson (1985) found more marked social class differences in concepts of health when they were defined in the abstract compared with when they were defined in relation to personal health. When asked in the abstract about health, working class women more frequently used a unidimensional definition of health relating to ability to carry out activities; whereas, their professional counterparts more frequently operated with multidimensional definitions relating to being active and fit (Calnan & Johnson, 1985). Calnan and Johnson (1985) suggest the social class differences in concepts of health,

particularly when elicited in the abstract, might be the result of the social context of the interview. Professionals may find it easier to give their views about abstract concepts and articulate those responses to a middle class interviewer (Calnan & Johnson, 1985). At present, the effect of socioeconomic status and other variables on concepts of health remains uncertain.

From these studies it is noted that important relationships concerning health concepts have been identified using lay persons as subjects. However, the research has been limited to a small number of individuals and cultural groups. Also, there is limited knowledge about the older adult's conception of health. Some investigators suggest that conceptions of health be refined and broadened to have greater relevance to the elderly (Colantonio, 1988; Minkler & Pasick, 1986). Accordingly, health should be defined as the ability to live and function effectively in society, to exercise self-reliance and autonomy to the maximum extent feasible, but not necessarily as total freedom from disease (Colantonio, 1988; Minkler & Pasick, 1986). Because the elderly population is such a heterogeneous group they may not share this same functional definition of health. Further investigation is indicated to explore the older person's conception of health. Idler

(1979) has identified the paucity of research in this area and emphasizes the importance of using laity as subjects. This strategy would ensure that the research remains socially relevant and grounded in reality.

Models of Health

Progress is being made toward the development of models of health. Schlenger (1976) proposed a model for structuring the concept of health based on a multidimensional view of health. This model involves a systems view of human beings, characterized by two underlying processes. One, a unidimensional negative feedback process, involves current concepts of health as absence of disease or attainment of equilibrium. The other, a multidimensional positive feedback process, involves self-actualization and growth. According to Schlenger (1976), a comprehensive definition of health must address both components. When health is viewed as unidimensional such as the absence of disease, an individual with chronic disease cannot move toward health without reduction in disease. As a result, the individual can never be considered healthy. With a multidimensional concept of health, an individual can continue to fulfill role expectations, adapt to environmental changes, or self-actualize, despite having a chronic disease. Therefore,

health may present in several dimensions despite the presence of disease.

Tripp-Reimer (1984) proposed a model of health that focused on normality as medically defined. Health in this conceptualization is seen as a state. A health grid is used to show that the health state contains two dimensions: an etic dimension (disease - nondisease), which reflects the scientific or objective interpretation of health; and the emic dimension (wellness - illness), which represents the lay or subjective definitions of health. The various quadrants of the grid: disease - wellness, disease - illness, nondisease - wellness, and nondisease - illness indicate congruence or incongruence between the perspectives of the layperson and the health professional. The model is presented as useful cross-culturally when health professionals and laypersons of differing ethnic background may disagree about health.

Newman (1980) defined health as the totality of life processes, including disease as a process. Newman's model of health addresses holistic characteristics of human beings. The model emphasizes the actualizing potential of individuals throughout the life span. Four dimensions of health are identified: (a) health is a fusion of disease and nondisease; (b) health is the manifestation of an

individual's unique pattern; (c) health is an expansion of consciousness with time and movement a measure and reflection respectively of that consciousness; (d) health encompasses the entire life process. Operational definitions for many of the terms used are needed before any testing of the model can occur.

Smith (1981, 1983) attempted to resolve the seemingly unrelated and multiple views of health into a number of distinctive concepts. According to Smith (1981, 1983), all of the various conceptions and ideas of health can be resolved into four distinctive types: (a) clinical, in which health is viewed as the absence of disease or symptoms; (b) role performance, in which health is viewed as the ability to fulfill socially defined roles; (c) adaptive, in which health is viewed as flexible adjustment to changing circumstances; and (d) eudaimonistic, in which health is viewed as exuberant well-being and self-realization. These four conceptions can be viewed as alternative ideas of health, although they are not mutually exclusive ideas (Smith, 1981, 1983). Moving from the clinical to the eudaimonistic, health conception becomes increasingly comprehensive (Smith, 1981, 1983).

Two studies reported in the literature have used Smith's model of health (Stuifbergen et al., 1990; Woods et al.,

1988). Woods et al. (1988) explored the meaning of health with a sample of women from a community in the U.S.A. Pacific Northwest. The question, "What does being healthy mean to you?" was used to elicit women's health images. In addition to evidence of the clinical, role performance, and adaptive concepts of health, the women's responses yielded evidence of nine health images consistent with the eudaimonistic concept of health. Stuifbergen et al. (1990) studied the definition of health perceived by adults with long-term disabilities. The adults in this study also supported the four concepts of health described by Smith (1981, 1983). The respondents placed the most emphasis on the role performance, adaptive, and eudaimonistic concepts of health.

In a major paradigm shift, the mandala of health developed within the Toronto Department of Public Health (Hancock, 1985; Hancock & Perkins, 1985) emphasizes an ecologic model of human health. The mandala of health in this conceptualization is a bio-psycho-socio-environmental model of health. It incorporates the individual, the family, the community and society in an holistic ecosystem. The model identifies four factors that influence the health of the individual and the family: (a) human biology, (b) personal behavior, (c) psychosocial environment, and (d)

physical environment. The individual, the family, and these four factors are shown in the mandala as existing within the community. The community is also identified as a major influence on health. Finally, the mandala identifies the community as existing within a western, technologic, science based culture. According to this model, the way in which one perceives health and reacts to illness is heavily influenced by cultural values, attitudes, and beliefs. The model provides a broad perspective on health.

The concept of health, then, has evolved over time. More traditional views of health, with disease as the central focus, have merged into complex, multidimensional models of health (Payne, 1983).

Relationship to Health-Promoting Behaviors

Few studies have focused on the relationship between definition of health and health behaviors. However, it has been suggested in the literature that the definition of health to which individuals subscribe may influence the extent to which they engage in health behaviors (Calnan & Johnson, 1985; Laffrey, 1986, 1990; Pender, 1987). Also, Pender (1987) proposes that differences in definitions of health should result in differing patterns of health behaviors.

Laffrey (1985) investigated the relationship between self-actualization and health conception, and the importance of these two variables in predicting health behavior choice in a random sample of adults living in three U.S.A. midwestern suburbs. The health conception measure was based on the four concepts of health as described by Smith (1981). Laffrey (1985) found that defining health as high-level wellness as opposed to absence of illness was positively correlated with behavior choices for the purpose of promoting health. However, since health behavior choice was measured and not actual health behavior, there may be differences in the relationships found.

Calnan and Johnson (1985) speculate that health concepts may not be of value in explaining patterns of health behavior. The question is raised about whether health as defined in the abstract is important in helping to explain health behavior. According to Calnan and Johnson (1985), the abstract definition may not be of value in explaining health behavior because it may only represent ideal "images" about health. Health conception may serve as a means of making sense of health action rather than acting as a precursor of actions (Calnan & Johnson, 1985). The social context in which health behavior occurs and the way circumstances encourage or act as a barrier to choices of actions may be

more influential in explaining health action (Calnan & Johnson, 1985).

The relationship between personal definitions of health and health behavior remains uncertain. Because few studies have focused on this relationship, further study is needed to clarify the relationship.

From this review of health concepts in the literature, certain gaps in knowledge are evident. There is confusion and conflict in the professional literature about the meaning of health. In addition, only a handful of studies have examined lay concepts of health and their correlates. There is limited knowledge about health conceptions held by elderly people. Further study is needed to explore these concepts. Although it has been suggested by Pender (1987) and other investigators that the definition of health to which a person subscribes may influence the extent to which he or she engages in health behaviors, few studies have actually examined this relationship. The relationship between an elderly person's definition of health and his or her health behavior remains uncertain. Further research is needed to clarify this relationship.

Older Adults and Perceived Health Status

In health terms, there is no magical age when one becomes an older adult (Health & Welfare Canada, 1989). Neugarten (1974) employs the terms "young-old" for persons 55 to 64 years of age, "old" for persons 65 to 75 years of age, and "old-old" for persons over 75 years of age. In addition, it is proposed that the well elderly are usually younger (60 to 75 years) (Burns, 1985).

It has been suggested that what older people do personally for their health is indicative of their self-perceived health status and their concerns about health (Hickey, 1988). According to Pender (1987), perceived health status plays a role in the frequency and intensity of health-promoting behaviors. Few investigators, however, have attempted to examine what health means in old age. Most researchers have preferred to investigate self-perceived health in old age, without examining the individual's conception of health.

It bears emphasizing that investigators rarely provide definitions of health for their respondents (Wright, 1985); subjects are left to use their own interpretations. In asking older adults to assess their health, it is as though some internalized and commonly accepted standard of health exists when the respondent is asked, "How would you rate

your health at the present time?" (Fillenbaum, 1979). Variations in concepts of health cautions against obtaining evaluations of personal health status without also obtaining evidence about the respondents' definitions of health (Wright, 1985).

What are subjects evaluating in studies in which health has been left undefined? The Health Promotion Survey (Health & Welfare Canada, 1988) found that despite higher rates of reported health problems among the elderly population, three out of four elderly people (aged 55 and older) reported that their health was good, very good, or excellent for their age. Similar results were found in other studies (LaRue, Bank, Jarvik, & Hetland, 1979; Linn & Linn, 1980; Minkler, 1978; Stoller, 1984). To some extent, these results are inconsistent with traditional expectations and images of aging (Health & Welfare Canada, 1989). The discrepancy between older people's perception of their health and the vital statistics on health in old age suggests that health is being evaluated in different ways (Gelein, 1983). In order to enable older people to enhance health according to their individual needs, an understanding of their health beliefs and behavior appears essential.

Psycho-social Correlates of Perceived Health

Gerontologists have investigated correlates of self-perceived health in order to understand what influences an older person's perception of health. Positive self-perceived health has been found to correlate with age (Cockerham, Sharp, & Wilcox, 1983; Ferraro, 1980; Maddox, 1962; Stoller, 1984), gender (Ferraro, 1980; Fillenbaum, 1979; Health & Welfare Canada, 1988; Stoller, 1984), education (Cockerham, Sharp, & Wilcox, 1983; Ferraro, 1980), and income (Minkler, 1978). For example, Cockerham, Sharp, and Wilcox (1983) found the proportion of people who feel their health is much better than others their age, to be approximately two times greater for people 60 and older than for those people less than age 60. The relationship between gender and self-assessment of health is more ambiguous. In general, older women have been found to assess their health more positively than older men. However, in the Health Promotion Survey (Health & Welfare Canada, 1988) older women were slightly more likely than older men to report only fair or poor health. Further research is needed to clarify this relationship.

In terms of socioeconomic level, Minkler (1978) found that members of a low-income group described their physical health less favorably than members of middle-class groups.

However, no such differences were noted with respect to their perceptions of their mental and emotional health. In fact, more than 90 per cent of the respondents (aged 60 to 102 years old) described their own mental and emotional health as the same or better than that of other people their age (Minkler, 1978). The fact that Minkler (1978) categorized health as physical, mental, and emotional health may have been a factor in the results obtained. Most investigators obtained a global assessment of health from older people without providing any particular health concept. It does appear, however, that there is some support for gender and social class differences in self-perceived health. Nevertheless, good self-rated health appears to be the norm among elderly respondents.

Many studies have attempted to gather information on the validity of self-perceived health measures. The usual approach is to use physicians' ratings, clinical findings, functional ability, and longevity as criteria for validation. This implies that most of the investigations tend to be concerned with physical health. There is a general tendency for data to demonstrate that self-assessments of health, among the elderly population, are positively related to these objective health status measures (Ferraro, 1980; Fillenbaum, 1979; Idler, Kasl, & Lemke,

1990; Kaplan & Camacho, 1983; LaRue, Bank, Jarvik, & Hetland, 1979; Linn & Linn, 1980; Maddox, 1962; Maddox & Douglass, 1973; Mossey & Shapiro, 1982). However, some writers question the appropriateness of such measures for assessing the validity of perceived health reports. For example, although physicians' evaluations are based on objective criteria, it has been found that the interpretations of such objective data tend to vary considerably (Hickey, 1980). Therefore, how valid are physician judgements as criterion measures of self-ratings of health? Stoller (1984) suggests that self-assessments of health are influenced by other factors besides the objective indicators of health status.

In summary, self-perceived health status is thought to play a role in the health actions of individuals. Researchers have investigated self-perceived health in old age, but rarely provided definitions of health for their respondents. The concepts of health underlying the self-reports of health remain uncertain. Despite this problem, the elderly population reports positive perceptions of their health. The factors influencing these perceptions of health are unclear. Further research into the older person's health beliefs and behavior is necessary.

Health Behavior

Definitions of Health Behavior

It is evident from the review of the literature that the concept of health behavior is not treated with consistency or clarity. Health behavior has been defined as "any activity undertaken by a person believing himself to be healthy, for the purpose of preventing disease or detecting it in an asymptomatic stage" (Kasl & Cobb, 1966). Holstein (1986) believes this definition is too static and should be more dynamic and holistic. Health behavior has since been depicted as a multidimensional phenomenon rather than a unidimensional phenomenon (Ruffing, 1979; Steele & McBroom, 1972). The result has been a list of health behavior indicators limited only by the imagination of the investigator and the purposes of the study. Often, conceptual distinctions along which behavior is organized do not exist (Rakowski, 1986).

In 1979, Harris and Guten introduced the concept of health-protective behavior to include both preventing and promoting activities. They defined health-protective behavior as "any behavior performed by a person, regardless of his/her perceived or actual health status, in order to protect, promote, or maintain his/her health, whether or not such behavior is objectively effective toward that end"

(Harris & Guten, 1979). Pender (1987) criticizes the definition as obscuring rather than clarifying the differing mechanisms that underlie health-protecting behavior as opposed to health-promoting behavior. Pender (1987) views such a distinction as essential to understanding differences in the dynamics underlying the respective behaviors.

Pender (1987) and Parse (1990) do make a distinction in health behaviors. Health-promoting behaviors represent individuals acting on their environment as they move toward higher levels of health rather than reacting to external influences or threats posed by the environment. Health-promoting behaviors are described as activities that are a part of an individual's lifestyle, such as physical exercise, nutritional eating practices, development of social support, and use of stress management techniques (Pender, 1987). In contrast, health-protecting behavior refers to prevention. Major emphasis is placed on guarding or defending an individual or group against illness or injury. Prevention is a set of actions that ward off specific illness conditions (Parse, 1990; Pender, 1987). Brubaker (1983) supports this distinction by indicating that to promote is "to help or encourage to exist or flourish", whereas, to prevent is "to keep from occurring".

In a more general sense, Hickey (1980) referred to health behavior as an important manifestation of a person's psychological perspective. It reflects both individual concerns about health and individual perceptions of health status. Over time, health behavior reveals a person's pattern of views about health (Hickey, 1980).

Such conceptual differences have implications for understanding health behavior. However, according to Dean, Hickey, and Holstein (1986), such differences are to be expected in the process of conceptualizing this neglected subject. They predict that a consensus will evolve from an exchange of ideas and an accumulation of knowledge. In the meantime, lack of consistent definitions makes it difficult to compare results across multiple investigations.

Correlates of Health Behavior

Mortality.

A series of longitudinal studies conducted by the Human Population Laboratory in Alameda County, California, explored the relationship of personal health practices and subsequent mortality (Belloc, 1973; Breslow & Enstrom, 1980; Kaplan, Seeman, Cohen, Knudsen, & Guralnik, 1987). Individual health practices included hours of sleep, regularity of meals, physical activity, smoking, drinking alcohol, and weight in relation to desirable standards for

height. The number of health practices reported showed a striking inverse relationship with age-adjusted mortality rates in both the 5 1/2 year (Belloc, 1973) and the 9 1/2 year mortality follow-up (Breslow & Enstrom, 1980). Mortality, as measured by age-adjusted rates in this probability sample of 7000 persons, was more strongly associated with poor health practices than it was with physical health status or income level (Belloc, 1973; Breslow & Enstrom, 1980). Data indicated support for the idea that following good health practices leads to longer life.

Branch and Jette (1984) question the generalizability of these findings to the elderly population. They used data from the Massachusetts Health Care Panel study to examine the same health practices and 5 year mortality rates in an elderly (65 years of age and older) sample. The consistent relationship between personal health practices and mortality found in the Alameda studies could not be replicated in the Massachusetts sample of elders.

Other studies, however, have found substantial evidence for the importance of health practices in the mortality of older persons (Kaplan, Seeman, Cohen, Knudsen, & Guralnik, 1987; Palmore, 1970; Rotevatn, Akslen, & Bjelke, 1989). The 17 year mortality follow-up in members of the Alameda County

study who were 60-94 years of age at baseline provides such evidence. In this age group personal health practices were associated with mortality (Kaplan, Seeman, Cohen, Knudsen, & Guralnik, 1987). These investigators argue that even among the elderly, mortality is not a uniform or random process. Many of the health behaviors that are important determinants of health among the middle-aged are also important for the elderly.

It is not clear if the conficting results in these studies stem from differences in populations studied, operational measurement, time of study, or some other factors. It is clear that increased attention has been placed on health behavior as one way to help individuals maintain vigor and good physical functioning (Gilbert, 1986; Tager, 1981; Verbrugge, 1984).

Physical health status.

One of the aims of the research of the Human Population Laboratory, in Alameda, California, during the past 20 years has been to investigate the relationship between health practices and physical health in the general population. Health is globally defined as a generalized state of physical well-being of the individual. The results consistently show that common health practices of daily life are positively and cumulatively related to physical health

status (Belloc & Breslow, 1972; Breslow, 1972; Wiley & Camacho, 1980). Similar results are reported in other studies (Palmore, 1970; Reed, 1983; Wilson & Elinson, 1981). In addition, the number of good health practices is reported to be positively associated with self-assessed health status; those people following a healthy lifestyle are more likely to rate their health as excellent (Health & Welfare Canada, 1988; Segovia, Bartlett, & Edwards, 1989).

Although empirical study of the relationship between personal health practices and physical health in the elderly population has been limited, some studies do support the above findings (Palmore, 1970; Stenback, Kumpulainen, & Vauhkonen, 1978). In a longitudinal study of health practices in the elderly, Palmore (1970) reported that exercise, weight control, and avoidance of cigarettes contributed to better physical health in this age group. Brown and McCreedy (1986), however, found no association between health practices and physical health status in a survey of elderly respondents (aged 55 years and older).

Despite the generally consistent positive relationship between health practices and physical health status, it is difficult to conclude that the good practices are responsible for better physical health. Some study results are cross-sectional and only describe statistical

association (Belloc & Breslow, 1972; Health & Welfare Canada, 1988; Segovia, Bartlett, & Edwards, 1989; Stenback, Kumpulainen, & Vauhkonen, 1978). At issue is the assumption that good health practices lead to better physical health status. There is the problem that physical health status can also affect health practices; persons in poor physical health may be unable to perform the health practices. Certain studies (Palmore, 1970; Reed, 1983; Wiley & Camacho, 1980; Wilson & Elinson, 1981) are significant because they show a positive relationship between health practices and physical health status over time while controlling for previous physical health status. They provide the clearest evidence that health practices have an impact on physical health.

The assumed importance of personal health practices suggests a need for a variety of studies of this phenomenon. The conflicting findings for older adults suggest a further need to clarify the relationship between health practices and physical health status in this age group.

Demographics.

The quest to understand the correlates and determinants of health behavior has intensified. The emphasis on demographic correlates, however, has offered little insight into the determinants of health behavior. The findings are

frequently contradictory or not predictive of health behaviors. For example, some studies report gender as an important predictor of health behavior (Brown & McCreedy, 1986; Mechanic & Cleary, 1980; Rakowski, 1988; Rakowski, Julius, Hickey, & Halter, 1987; Walker, Volkan, Sechrist, & Pender, 1988), while other analyses dispute such a relationship (Hickey, Rakowski, & Julius, 1988; Speake, Cowart, & Pellet, 1989).

Education, income, marital status, and age have also been reported as factors in health behavior (Brown & McCreedy, 1986; Mechanic & Cleary, 1980; Prohaska, Leventhal, Leventhal, & Keller, 1985; Rakowski, 1988; Riffle, Yoho, & Sams, 1989; Speake, 1987; Speake, Cowart, & Pellet, 1989; Speake, Cowart, & Stephens, 1991; Walker, Volkan, Sechrist, & Pender, 1988; Weitzel, 1989). According to Norman (1987), socioeconomic status is the demographic characteristic most reliably associated with health behavior. On the other hand, Rakowski's (1988) analysis suggests that there are no consistent predictors of personal health practices across age cohorts. The interpretations that are made regarding the important correlates of health behavior in adulthood depend on the age group that is examined and on the set of health practices that are chosen (Rakowski, 1988). Such a perspective has implications for

how health behavior is studied and defined in any particular investigation.

An increasing number of studies are examining the personal health behaviors of older adults and the factors associated with those behaviors. Unfortunately, most studies have tended to examine one or a small set of behaviors that are not consistently defined across studies. As a result, comparing the various findings is difficult if not impossible. The evidence suggests that demographic factors are potential contributors to health behavior. But how these factors interact remains unknown (Hickey, Rakowski, & Julius, 1988; Norman, 1987). Relatively little is known about the most important psycho-social correlates of health behavior in the older population.

Health Behavior and Older Adults

Interest in personal health behavior has increased in recent years. It is supported by a growing body of evidence that links individual behavior to positive health outcomes. As the elderly population increases at an unprecedented rate, to an estimated 21 percent of the Canadian population by the year 2031 (Statistics Canada, 1984), greater attention to the health and social needs of this population will be necessary. When it is recalled that a person reaching age 65 has, on average, 10 to 20 years of life

remaining (Statistics Canada, 1984), the importance of extending health-promoting concerns to this age group is underscored (Minkler & Pasick, 1986; Moyer, 1981; Pender, 1987). The exclusion of elderly people as a focus of concern in health-promoting efforts ignores the potential for positive outcomes in this age group (Gelein, 1983; Gilbert, 1986; Kee, 1984; Minkler & Pasick, 1986; Moyer, 1981; Walker, Volkan, Sechrist, & Pender, 1988).

Although many studies of health behavior are limited by small samples or the exclusion of older respondents, the Alameda County survey drew from a probability sample of 7000 adults, with approximately 1000 respondents over age 65. Belloc and Breslow (1972) found a higher rate of positive health behavior among older respondents. Other studies have reported similar findings (Prohaska, Leventhal, Leventhal, & Keller, 1985; Speake, 1987; Volden et al., 1990; Walker, Volkan, Sechrist, & Pender, 1988). Canada's Health Promotion Survey (Health & Welfare Canada, 1988) also found that the positive health practices of older Canadians (aged 55 and older) are equal to or better than those of younger people.

Earlier studies limited their focus to a small number of health behavior practices, such as diet, sleep, exercise, weight control, smoking, and alcohol consumption. Only recently have researchers begun to examine a wider range of

health behaviors and to focus on elderly people (Duffy & MacDonald, 1990; Prohaska, Leventhal, Leventhal, & Keller, 1985; Rakowski, Julius, Hickey, & Halter, 1987; Riffle, Yoho, & Sams, 1989; Speake, Cowart, & Pellet, 1989; Speake, Cowart, & Stephens, 1991; Walker, Volkan, Sechrist, & Pender, 1988). For example, Walker, Volkan, Sechrist, and Pender (1988) studied health-promoting behaviors using the Health-Promoting Lifestyle Profile on a sample of community elderly (men and women aged 55 to 88) living in the midwest U.S.A.. The profile includes 6 dimensions of health-promoting behavior: self-actualization, health responsibility, exercise, nutrition, interpersonal support, and stress management. The results revealed that older adults are a heterogeneous group reflecting variation in the nature and frequency of health-promoting behaviors. The results from this community-based study are consistent with the Health Promotion Survey which found a wide range of positive health practices, in which older respondents varied in their health behaviors (Health & Welfare Canada, 1989). More recently, however, other American studies have also reported using the Health-Promoting Lifestyle Profile to examine older adults' health-promoting behaviors (Duffy & MacDonald, 1990; Riffle, Yoho, & Sams, 1989; Speake, Cowart, & Pellet, 1989). The results from these community-based

studies are similar; they indicate that health-promoting behaviors are a common practice among older adults.

In order to assist older people in developing health-promoting behaviors, an understanding of their health-promoting behaviors is essential. Effective gerontological program development is limited by gaps in our knowledge about health behavior and functioning of older people (Dean, Hickey, & Holstein, 1986). By focusing narrowly on disease avoidance behaviors, when 80 percent of those over age 65 report at least one health problem (Health & Welfare Canada, 1989), one may fail to address the health-promoting needs of the older adult and contribute to the cultural dread of aging so prevalent in our society (Minkler & Pasick, 1986). The results may be a passive and palliative approach to health maintenance and treatment rather than health-promoting daily routines for older adults.

According to Dean, Hickey, & Holstein (1986), research in aging must shift from problem-centered approaches and pathology models to approaches which identify the factors shaping health and health-related behaviors. In addition to testing research models, studies documenting health-related behaviors and the factors related to those behaviors must also be given priority (Dean, Hickey, & Holstein, 1986).

Indeed, recent studies of older adults have examined psychological factors related to their health-promoting behaviors as measured by the Health-Promoting Lifestyle Profile. The psychological factors examined included perceived health status, health locus of control, and perceived social support (Riffle, Yoho, & Sams, 1989; Speake, 1987; Speake, Cowart, & Pellet, 1989; Speake, Cowart, & Stephens, 1991). Positive relationships between health-promoting behaviors and perceived social support and perceived health status were found in the studies. In addition, higher internal locus of control scores were associated with higher health-promoting behavior scores (Speake, Cowart, & Pellet, 1989; Speake, Cowart, & Stephens, 1991). However, less than 24% of the variance in health-promoting behaviors was accounted for by the psychological factors; a large percentage of variance in health-promoting behaviors remains unexplained.

In summary, it is evident from the review of the literature that there is no agreed upon definition of health behavior. Without consistency and clarity in the concept, it is difficult to compare findings across studies. Nevertheless, a number of studies attempt to identify the correlates of health behavior. Support is mounting for the benefits of positive health behavior in terms of reduced

mortality and improved physical health status. The evidence suggests that demographic factors are potential contributors to health behavior although findings are somewhat contradictory. How these factors interact remains unknown. In general, little is known about the most important psycho-social correlates of health behavior in the various age groups, including the elderly population.

Studies of older adults indicate that elderly people do report practicing positive health behaviors. More recent studies have expanded their focus to include a broader range of health practices. In some cases, older adults are described as a heterogeneous group reflecting variation in the nature and frequency of health behaviors. Gaps, however, remain in our knowledge about the health-promoting behaviors of older people. Further studies are needed to examine health-promoting behaviors of older adults and the factors related to those behaviors.

Conclusions

This review of the literature has summarized research on definitions of health and health-promoting behaviors of the elderly. The literature on definitions of health displays a multitude of meanings for health. However, few studies have examined lay concepts of health or the health conceptions

held by elderly people. Although it has been suggested in the literature that the definition of health to which one subscribes may influence the extent to which one engages in health behaviors, few studies have actually examined this relationship.

Self-perceived health in old age has been reported extensively in the literature. Self-perceived health is thought to play a role in the health actions of individuals. What subjects are evaluating when health has not been defined is uncertain. Nevertheless, the elderly population reports positive perceptions of their health. Studies of how health conceptions might influence perceived health status and eventual health actions are lacking.

There is much literature on health behavior. Unfortunately, there is no consistency in defining or operationalizing the concept. A number of studies identify some correlates of health behavior: mortality, physical health status, and demographic variables. However, knowledge is limited on how the various factors interact. Gaps remain in our knowledge about the health-promoting behaviors of older people and the psycho-social factors related to those behaviors.

Chapter 3. Conceptual Framework

The Health Promotion Model proposed by Pender (1987) serves as the conceptual framework for this study (see Figure 1). The model is proposed by Pender (1987) as an explanation of why individuals engage in specific health behaviors. The focus of the model is on explaining the "likelihood" of engaging in health-promoting behaviors.

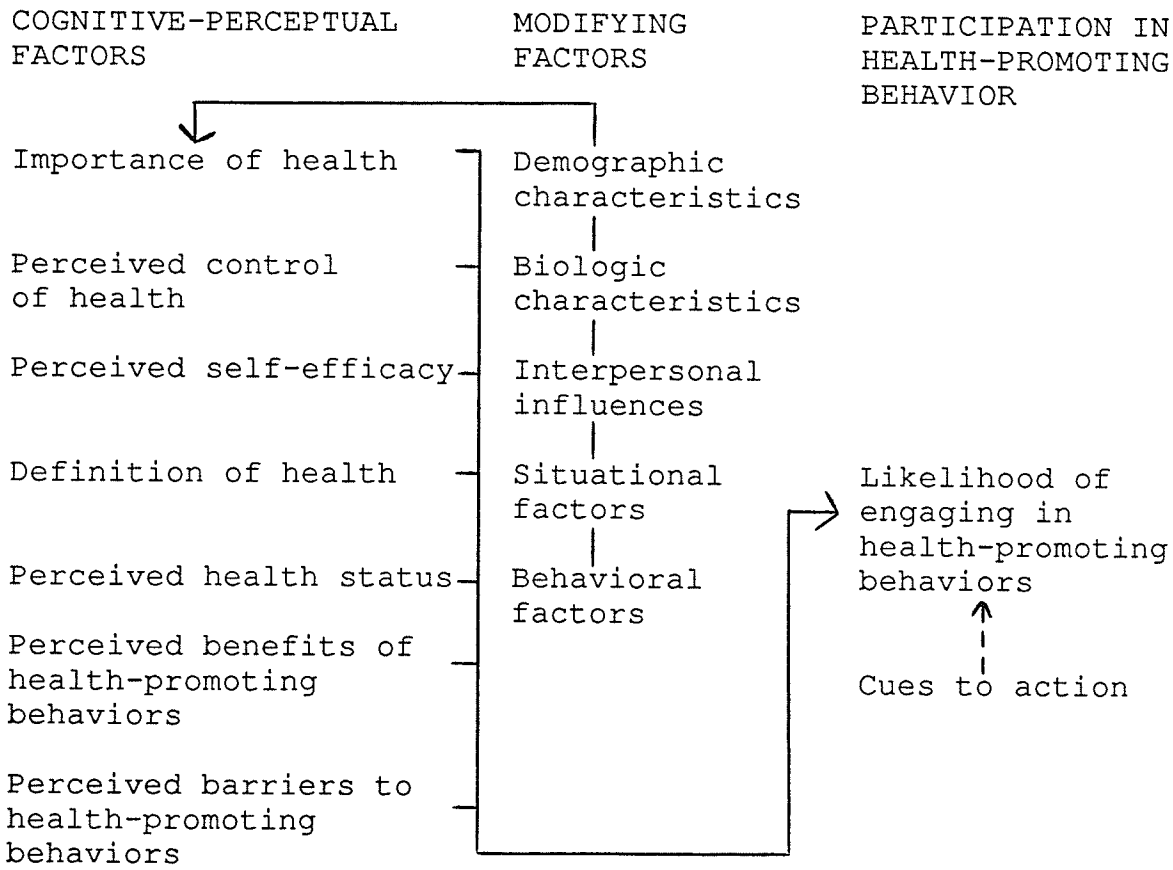

Figure 1. Health Promotion Model. Note. From Health promotion in nursing practice (2nd ed.) (p.58) by N.J. Pender, 1987, Norwalk, CT: Appleton & Lange.

Although some components of the model are supported by research findings from the health promotion literature, the nature of the relationships among the variables and the extent to which the model can explain the likelihood of engaging in health-promoting behaviors remain to be determined. Recently, investigators have conducted research to test empirically the explanatory potential of the model in different populations. This research has included testing parts of the model with blue collar workers (Weitzel, 1989), ambulatory cancer patients (Frank-Stromborg, Pender, Walker, & Sechrist, 1990), and well adults living in the community (Speake, Cowart, & Pellet, 1989; Speake, Cowart, & Stephens, 1991; Walker, Volkan, Sechrist, & Pender, 1988). To date, only a small amount of the variance in health-promoting behaviors is explained by the cognitive-perceptual variables and the demographic variables identified in the model.

The Health Promotion Model is intended to be a complementary counterpart to models of health protection such as the Health Belief Model. Pender (1987) makes a distinction between health-protecting and health-promoting behaviors. Health-protecting behaviors refer to prevention; prevention is a set of actions that ward off specific illness conditions or injury. In contrast, health-promoting behaviors are described as activities that are a part of an

individual's lifestyle, such as physical exercise, nutritional eating practices, development of social support, and use of stress management techniques (Pender, 1987).

An assumption of the Health Promotion Model that distinguishes it from health protection models is the underlying motivation for the behavior. Desire for growth, self-actualization, and quality of life provides the motivation for health-promoting behaviors; whereas, the "negatively valenced states of illness and disease" (Pender, 1987, p.57) provide the motivation for health-protecting or preventive behaviors. Health-promoting behaviors represent individuals acting on their environment as they move toward higher levels of health rather than reacting to external influences or threats posed by the environment (Pender, 1987).

The Health Promotion Model is derived from social learning theory (Pender, 1987). As a result, the model emphasizes the importance of cognitive mediating processes in the regulation of behavior. The determinants of health-promoting behavior are categorized into cognitive-perceptual factors, modifying factors, and cues affecting the likelihood of action.

Pender (1987) identifies the cognitive-perceptual factors as the main motivational mechanisms for acquiring

and maintaining health-promoting behaviors. Each factor is proposed as exerting a direct influence on an individual's likelihood of engaging in health-promoting behaviors. The cognitive-perceptual factors identified in the model are as follows: (a) importance of health; (b) perceived control of health; (c) perceived self-efficacy, or belief that one can successfully execute the required behavior; (d) definition of health; (e) perceived health status; (f) perceived benefits of health-promoting behaviors; and (g) perceived barriers to health-promoting behaviors.

A number of modifying factors are identified in the model as indirectly influencing the likelihood of participating in health-promoting behaviors. The modifying factors include: (a) demographic characteristics, (b) biological characteristics, (c) interpersonal influences, (d) situational factors, and (e) behavioral factors. According to Pender's (1987) model, modifying factors exert their influence through cognitive-perceptual factors that directly influence the likelihood of engaging in health-promoting behaviors.

Finally, the likelihood of engaging in health-promoting behaviors is hypothesized by Pender (1987) to depend also on either internal or external cues to action. Increased feelings of well-being or personal awareness of the

potential for growth are possible internal cues for behavior (Pender, 1987). Whereas, the mass media or conversations with other people may be external cues for action (Pender, 1987).

In this investigation no attempt is made to validate or confirm the entire Health Promotion Model. Moreover, while the model asserts a direct linkage between factors in the model and "intention" to act, this study seeks to confirm an extension of the model, namely, the relationship between definition of health and "actual" health-promoting behaviors. In other words, the focus of the model is on explaining the "likelihood" of engaging in health-promoting behaviors rather than "actual" health-promoting behaviors which were examined in this study. It has been suggested in the literature that the definition of health to which individuals subscribe may influence the extent to which they engage in health behaviors (Calnan & Johnson, 1985; Laffrey, 1986, 1990; Pender, 1987). Also, Pender (1987) proposes that differences in definitions of health should result in differing patterns of health behaviors.

Demographic characteristics such as age, gender, marital status, education, and income are offered in the model as indirectly influencing health-promoting behaviors through their influence on cognitive-perceptual factors. However, a

review of the literature suggests there may be a direct correlation among certain demographic characteristics, as identified in Pender's (1987) model, and concepts of health and health-promoting behaviors. Therefore, the extent to which demographic characteristics are associated with older adults' definition of health and their health-promoting behaviors was also examined in this study.

In summary, a health protection model is concerned with prevention; whereas, Pender's (1987) Health Promotion Model is more concerned with well-being, fulfillment, and self-actualization. Perhaps more relevant for older adults is such a health-enhancement model that encompasses a positive approach to living. The Health Promotion Model serves to introduce order among concepts that may explain the occurrence of health-promoting behaviors. The nature of the relationships among the concepts and the extent to which the model can explain health-promoting behaviors in various populations, including older adults, remain to be determined.

Chapter 4. Methodology

Design

The study design is a descriptive correlational design (Waltz & Bausell, 1981). The study examined the relationship between definition of health and health-promoting behaviors in one group of older adults, namely, those older adults participating in fitness facilities/programs. Demographic factors identified in Pender's (1987) model and in the literature were also examined in the analysis. These demographic factors were age, gender, marital status, education, and income. The design of this study involved the administration of the Laffrey Health Conception Scale (Laffrey, 1986), the Health-Promoting Lifestyle Profile (Walker, Sechrist, & Pender, 1987), and a demographic form.

Sample

Older adults from three fitness facilities/programs were approached in the Fall of 1990 and invited to participate in this study. The sample consisted of older male and female adults participating in fitness facilities/programs in Winnipeg, Manitoba. More specifially, the older adults were fitness members at a non-profit community based facility (Site A), a fitness facility located in a housing complex for senior citizens (Site B), and a city fitness program

designed for older adults (Site C). Volunteers who met the following criteria were included: (a) age 55 years or older, (b) residing in the community (as opposed to a care facility), (c) ability to understand and speak English.

Eighty-five adults, aged 55 or older, volunteered to take part in the study. However, those study instruments in which more than 10% of the items were missing were eliminated prior to analysis. As a result, 77 out of 85 (90.8%) respondent questionnaires were retained for data analysis.

Twenty-nine fitness members from Site A participated in the study over the 4 month data collection period, August to November, 1990. Nineteen (45%) older adults from the fitness introductory classes and 10 (1%) older adults from the general fitness membership agreed to participate. All respondent questionnaires from Site A were retained for data analysis.

Twenty-four fitness members from Site B volunteered to take part in the study. Nineteen (76%) members from the regular fitness class and five (21%) members from the chair fitness class returned questionnaires. However, three respondent questionnaires from the regular fitness class were eliminated prior to data analysis because of

incompleteness. As a result, a total of 21 respondent questionnaires from Site B were retained for data analysis.

At Site C, 32 (80%) fitness class members volunteered to participate in the study. Five respondent questionnaires were eliminated because of incompleteness. In total, 27 respondent questionnaires from Site C were retained for data analysis.

Characteristics of the sample.

Selected demographic characteristics are shown in Table 1. The mean age of the respondents was 70.1 years (Standard Deviation = 6.5), with a range from 56 to 88 years. Seventeen percent (n=13) of the respondents were aged 56 to 64 years, 68% (n=52) were aged 65 to 75 years, and 15% (n=11) were over age 75 years.

Seventy-nine percent (n=61) of the participants were female and 21% (n=16) were male. All the participants were female at one facility. This majority female figure represents approximately twice the ratio of actual women to men in this age group at two of the facilities' classes during the data collection period.

Forty-nine respondents (63.6%) were married, 22 (28.6%) were widowed, 1 was separated (1.3%), and the remaining 5 were divorced (6.5%). These rates are reflective of national statistics of the elderly in Canada (Statistics Canada,

1987). Seventy subjects responded to the question on household income: 7 (10%) reported an income of less than $10,000; 13 (18.6%) reported an income of $10,000 to $19,999; and 50 (71.4%) reported an income of $20,000 or more.

Although Canada has no official poverty line, it has what Statistics Canada describes as low-income cutoff lines which vary by community and family size. In a city the size of Winnipeg, a family of two in 1989 required approximately $18,000 in income. One person required $13,511 (Statistics Canada, 1990). The majority of participants in this study were above these income cutoff lines.

Table 1

Selected Demographic Characteristics of Study Participants

Variable	n	%
Age (years)		
56 - 64	13	17.0
65 - 75	52	68.0
> 75	11	15.0
Gender		
Female	61	79.0
Male	16	21.0
Marital Status		
Married	49	63.6
Widowed	22	28.6
Separated	1	1.3
Divorced	5	6.5
Household Income		
< $10,000	7	10.0
$10,000 - $19,999	13	18.6
$20,000 - $29,999	25	35.7
$30,000 - $39,999	12	17.1
≥ $40,000	13	18.6

Educational levels ranged from 6 to 21 years (M=12.6, SD=3.0). Approximately 5% reported less than nine years of formal education. In comparison, 41% of older Manitobans received less than nine years of formal education (Statistics Canada, 1989). This comparison suggests the study sample was more highly educated than the general population of older adults in Manitoba. Not surprisingly, there was a positive correlation between education and income ($r=.48$, $p<.01$). In addition, 87% (n=67) of the sample respondents indicated that they were not currently employed. The majority of respondents (78.4%) identified their past or present occupation as professional (n=25) or office and clerical (n=33) work.

Seventy-seven subjects responded to the question about the length of time they participated in the fitness facility (see Table 2): 37 respondents (48.1%) indicated they had been participating for more than 2 years, 31 respondents (40.3%) indicated 6 months or less, and the 9 remaining respondents (11.7%) indicated 7 months to 2 years. Respondents reporting participation rates of more than 2 years tended to be older (M=72 years), whereas, those reporting participation rates of 6 months or less were younger (M=67 years). Also, the majority of respondents

reporting participation rates of more than 2 years were from Site C (n=22).

Table 2

Length of Time Study Participants Participated in Fitness Facility

Length of time at facility	n	Percent of total (N=77)
less than 1 month	19	24.7
1 month - 6 months	12	15.6
7 months - 12 months	2	2.6
13 months - 2 years	7	9.1
more than 2 years	37	48.1

It was expected that some older adults would have health problems. In the present study, 28 respondents (36.4%) reported having at least one chronic illness. The majority (63.6%) reported no chronic illnesses. The two most commonly reported chronic illnesses were high blood pressure (n=11) at 39.3% and arthritis (n=6) at 21.4%. Six respondents (21.4%) reported more than one chronic illness. Of the total sample (N=77), half the men (n=8) and 32.8% (n=20) of the women reported a chronic illness.

At the same time, the older adults rated their own health positively. In describing their health now compared to last year, 76.6% (n=59) of the respondents said their health was about the same and 20.8% (n=16) said it was better. Only two respondents (2.6%) said it was worse. Compared to others their age, 49.3% (n=36) described their health as about the same and 49.3% (n=36) described it as better. Only one respondent (1.4%) described it as worse. These results are consistent with the literature on older adults' perceived health.

Instrumentation

Before the study was conducted, permission to use the Laffrey Health Conception Scale (see Appendix A) and the Health-Promoting Lifestyle Profile (see Appendix B) was obtained from the respective copyright owners. In addition to these study instruments, a demographic form (see Appendix C) was used to collect data.

The demographic form contains items identified in the literature as being associated with the two concepts examined in this study, namely, definition of health and health-promoting behaviors. Demographic characteristics such as age, gender, marital status, education, and income have been discussed in the literature as factors associated with these concepts. In addition, the literature suggests that

perceived health status and the presence or absence of chronic illness may be associated with individuals' concepts of health and their health behavior (Hickey, 1980; Morse, 1987). Therefore, these items were also included in the demographic data form. The information provided on this data form was used to describe the sample; specific demographic characteristics (age, gender, marital status, education, income) were also examined for their relationship with older adults' definition of health and for their relationship with older adults' health-promoting behaviors.

Laffrey Health Conception Scale.

The Laffrey Health Conception Scale (LHCS) (Laffrey, 1986) is a relatively new instrument developed to measure the meaning of health held by different individuals. The LHCS is based on Smith's (1981) description of four dimensions of health, and includes the following:

1. Clinical: The absence of disease, illness, or symptoms. Health is medically defined and is illness- or symptom-focused.

2. Role Performance/Functional: Fulfillment of socially defined roles. Ability to perform/function as expected according to the roles held by the individual.

3. Adaptive: Flexible adjustment to changing circumstances. Ability to adapt to environmental stresses.

4. Eudaimonistic: Exuberant well-being. Ability to transcend ordinary life situations to achieve higher levels of well-being. Ability to achieve highest potential and self-realization.

Items for the LHCS were developed from a sample of 78 midwestern adults participating in adult education evening courses who were asked, "What do you mean when you say you are in good health?" Laffrey selected for inclusion in a 28 item scale the statements that were consistent with Smith's four dimensions of health (Laffrey, 1986).

The LHCS consists of 28 items in a Likert format ranging from "1" (strongly disagree) to "6" (strongly agree). Each item is a short descriptive statement about the nature of health. The four dimensions of health conception are each represented by seven items. An individual's score on the LHCS is obtained by summing the responses for each dimension of health conception and then for the total scale (see Appendix D). The score indicates the relative strength of the health conception dimensions.

Content validity of the LHCS was determined by submitting the 28 items to a panel of eight nurse experts who placed them into the four categories according to definitions of the categories (Laffrey, 1986). The LHCS was then administered to a sample of graduate nursing students

(N=141) to determine the instrument's construct validity and internal consistency. Construct validity was assessed by doing a factor analysis of the 28 items (Laffrey, 1986). The factor analysis, using the principal components method, yielded four factors which were identical to the four dimensions conceptualized for the development of the instrument. The four factors together explained 62% of the variance (Laffrey, 1986). Alpha coefficients indicated a high degree of internal consistency in the instrument, ranging from .867 to .884. A test-retest reliability coefficient after one week was .84 (Laffrey, 1986). Although a new instrument, the LHCS indicated high levels of reliability and validity. It had been tested thus far with adults living in the community and graduate nursing students.

The instrument warrants further use with different populations, including the elderly. The dimensions of health represented in the LHCS are relevant to the older adult. In the Morse (1987) study of lay concepts of health, where nearly half the subjects were 60 to 89 years of age, there are certain commonalities with Smith's (1981) dimensions of health. For example, health was described in the following ways: being able to perform normal activities of daily living, not being sick, coping with life, close

interpersonal relationships, and happiness. Smith's (1981) dimensions of health are also similar to the concepts of health identified by elderly Aberdonians aged 60 and older (Williams, 1983). This sample of older adults identified health as absence of illness and disease, and fitness for normal activities and obligations. A functional definition of health is also advocated as relevant to the elderly population by some investigators (Colantonio, 1988; Minkler & Pasick, 1986). Therefore, the LHCS appeared to have some construct validity for the older adult to justify its use in this study.

Health-Promoting Lifestyle Profile.

The Health-Promoting Lifestyle Profile (HPLP) (Walker, Sechrist, & Pender, 1987) is a recently developed instrument to measure health-promoting behaviors. The HPLP is based on six dimensions of a health-promoting lifestyle, and includes the following (Walker, Volkan, Sechrist, & Pender, 1988):

1. Self-actualization: Seeking personal development and experiencing self-awareness; having a sense of purpose.

2. Health responsibility: Attending to one's own health. Seeking professional assistance when necessary.

3. Exercise: Adhering to regular exercise patterns.

4. Nutrition: Making food choices and establishing meal patterns.

5. Interpersonal support: Maintaining relationships involving a sense of closeness.

6. Stress management: Recognizing stress and acting to control it and achieve relaxation.

The HPLP is a 48 item summated behavior rating scale that uses a Likert-type response format (1=never to 4=routinely) to measure the frequency of health-promoting behaviors. The number of items per dimension ranges from 5 to 13. The total instrument and each subscale are scored separately by summing the responses (see Appendix E).

Content validity of the HPLP was evaluated during instrument development by four nurse experts familiar with the health promotion literature. The HPLP was administered to a convenience sample of adults (N=952) to determine the instrument's construct validity and internal consistency. Construct validity was assessed by factor analysis using the principal axis factoring extraction method (Walker, Sechrist, & Pender, 1987). Factor analysis isolated the six dimensions comprising the instrument. The six factors together explained 47% of the variance (Walker, Sechrist, & Pender, 1987).

The total instrument was found to have a high internal consistency, with an alpha coefficient of .922 (Walker, Sechrist, & Pender, 1987). The alpha coefficient for the

subscales ranged from .702 to .904. These alpha reliabilities were generally comparable to those obtained in other investigations (Frank-Stromborg, Pender, Walker, & Sechrist, 1990; Speake, Cowart, & Pellet, 1989; Walker, Volkan, Sechrist, & Pender, 1988; Weitzel, 1989). A test-retest reliability coefficient of .926 after two weeks indicated the instrument's stability (Walker, Sechrist, & Pender, 1987). Reliabilities over .70 are considered sufficient for instruments used in basic research (Nunnally, 1967; Shelley, 1984). The HPLP appeared to have sufficient validity and reliability for further use in various adult populations.

Assessment of Measurement Instruments: Current Study

Information on the instruments used in this study was obtained from the data analysis. While the current sample was too small to permit comprehensive psychometric study of the two instruments for use with this population, preliminary findings were determined.

Laffrey Health Conception Scale.

Internal consistency of the total LHCS and its four dimensions was examined using Cronbach's alpha. The alpha coefficients calculated were as follows: the total scale .922, clinical health dimension .870, functional health dimension .844, adaptive health dimension .886, and

eudaimonistic health dimension .808. Alpha coefficients showed a high degree of internal consistency comparable to those obtained by Laffrey (1986) and others (Stuifbergen et al., 1990).

However, an examination of Pearson correlation coefficients among dimension scores of the LHCS showed some redundancy (see Table 3). A correlation level of .700 among dimensions was an indication of redundancy (Nunnally, 1967). The high intercorrelations (0.670-0.744) among the functional, adaptive, and eudaimonistic dimensions in the present study suggest that the three dimensions were not measuring relatively distinct dimensions of health conception in this sample of older adults.

Table 3

Pearson Correlation Coefficients among Dimensions of the Laffrey Health Conception Scale (N=77)

Dimension	1	2	3	4
1. Clinical	1.000	0.497	0.276	0.461
	0.000*	0.000	0.015	0.000
2. Functional		1.000	0.744	0.670
		0.000	0.000	0.000
3. Adaptive			1.000	0.705
			0.000	0.000
4. Eudaimonistic				1.000
				0.000

Note. * = p values.

Next, the inter-item correlation matrix was examined for possible redundant items. Four item correlations above a .700 level were found among the dimensions of the scale. Three adaptive health items were highly correlated with three functional health items and one eudaimonistic health item.

More specifically, the adaptive health item, "coping with changes in my surroundings" correlated at .711 and .731

with the functional health items, "adequately carrying out my daily responsibilities" and "carrying on the normal functions of daily living", respectively. The latter functional health item also correlated at .774 with another adaptive health item, "not collapsing under ordinary stress".

Lastly, the adaptive health item, "being able to cope with stressful events" correlated at .749 with the eudaimonistic health item, "facing each day with zest and enthusiasm". The high correlations suggest the items were measuring similar rather than distinct concepts of health.

Health-Promoting Lifestyle Profile.

Alpha coefficients were calculated for the total HPLP and its six dimensions. These alpha coefficients were as follows: the total scale .889, self-actualization .856, health responsibility .811, exercise .592, nutrition .645, interpersonal support .734, and stress management .687.

An alpha coefficient of .700 was accepted as a satisfactory level of reliability (Nunnally, 1967). From these results, it would appear that for this sample of older adults the internal consistency of the total scale was adequate. However, the exercise, nutrition, and stress management dimensions lacked internal consistency for this sample. The alpha coefficients were generally lower than

those reported by Walker, Sechrist, and Pender (1987) and others (Frank-Stromborg et al., 1990; Speake, Cowart, & Pellet, 1989; Weitzel, 1989). Differences may be due to the small sample size or different population characteristics.

The Pearson correlation coefficients among the six dimensions of the HPLP are presented in Table 4. The low to moderate correlations suggest that each dimension was measuring a relatively distinct but related dimension of health-promoting lifestyle without being redundant. Also, an examination of the inter-item correlation matrix did not show any redundant items in the HPLP scale.

Table 4

Pearson Correlation Coefficients among Dimensions of the Health-Promoting Lifestyle Profile (N=77)

Dimension	1	2	3	4	5	6
1. SA	1.000	0.432	0.215	0.303	0.546	0.310
	0.000*	0.000	0.061	0.007	0.000	0.006
2. HR		1.000	-0.019	0.480	0.330	0.459
		0.000	0.869	0.000	0.003	0.000
3. E			1.000	0.013	0.036	0.200
			0.000	0.911	0.755	0.081
4. N				1.000	0.311	0.451
				0.000	0.006	0.000
5. IS					1.000	0.319
					0.000	0.005
6. SM						1.000
						0.000

Note. SA = self-actualization; HR = health responsibility; E = exercise; N = nutrition; IS = interpersonal support; SM = stress management.

* = p values.

Access to the Sample

Volunteers were sought from a fitness program at Site A, from a senior fitness program at Site B, and from a city community fitness program for seniors at Site C. In general, the method of recruitment was similar for each fitness program.

Permission for access was requested from the Executive Director of the facility and/or the Program Supervisor. The investigator met with the fitness instructors to explain the study and request permission to distribute copies of the explanation of the study (see Appendix F) to individuals in the fitness classes. This explanation stated the criteria for subject selection, the method of data gathering, the expected time requirements, and the measures for confidentiality and anonymity. At the end of the class or at the next class, the fitness instructor asked those individuals interested in participating in the study to meet the investigator after the class to complete the questionnaires. The fitness instructor emphasized to class members that participation in the study was voluntary.

A second option used at Site A was to print a notice identifying and explaining the study in the centre's newsletter and on the centre's bulletin board. Potential volunteers left their name and phone number on a slip of

paper at the front desk. The investigator then telephoned the older adult and an appointment was made to meet at the facility. All in all, data collection took approximately four months.

Procedure for Data Collection

Data collection took approximately 1/2 hour with the volunteers. The data collection occurred after the class; if that time was not convenient, data collection occurred at a mutually convenient time and location. The explanation of the study was reviewed and any questions were answered. The consent form (see Appendix G) was then read and signed. Next, the participant was offered the questionnaires; first, the demographic form was completed followed by the Health-Promoting Lifestyle Profile and the Laffrey Health Conception Scale. The investigator was available to answer any questions.

Data Analysis

Controversy exists regarding levels of measurement and the proper statistical procedures to use on the resulting scores. Two considerations used to select a statistical procedure included (a) measurement of the variables on an interval scale, and (b) a normal distribution of the variables (Polit & Hungler, 1983). The distinction between ordinal and interval levels of measurement is particularly

problematic (Polit & Hungler, 1983; Waltz & Bausell, 1981). Taking a pragmatic approach, the two Likert-type measurement scales (LHCS and HPLP) used in this study were considered to yield interval level data. The response scale of 1 to 6 and 1 to 4 for each item on the LHCS and the HPLP instruments respectively, represents an equal interval continuum, and therefore, the sum of responses is considered interval data (Shelley, 1984). In other words, the numbers representing an attribute are equally spaced and can be rank ordered.

The demographic characteristics, gender and marital status represent nominal data. For analytical purposes, gender and marital status were converted to dummy variables and treated as interval data (Andrews, Klem, Davidson, O'Malley, & Rodgers, 1981; Shelley, 1984). The gender variable was coded 1 signifying male and 2 signifying female, and the marital status variable was coded 1 signifying married and 2 signifying not married.

Instruments in which more than 10% of the items were left blank were eliminated prior to analysis. If less than 10% of the items on an instrument were left blank, the mean sample value for the blank scale item was substituted. This procedure was congruent with other studies that used these research instruments (Frank-Stromborg, Pender, Walker, & Sechrist, 1990; Walker, Volkan, Sechrist, & Pender, 1988;

Weitzel, 1989). Descriptive statistics such as frequencies, means, modes, and standard deviations were then calculated on the data from the demographic form, the LHCS, and the HPLP.

The Pearson product-moment correlation coefficient was used to examine the relationships between the demographic variables (age, gender, marital status, education, income) and the LHCS and the HPLP. To obtain an estimate of the variance shared by the variables, that is, to what extent the variance is explained, the correlation coefficient was squared. Nursing research commonly uses the 5 percent level of significance (Shelley, 1984). For this study, the level of significance or alpha level was set at 5 percent.

The raw scores from the LHCS and the HPLP were converted to a derived score, namely, a z score. The z score provides a means for comparing scores on scales that have different scoring measures (Shelley, 1984). The LHCS has a 6 point Likert response format, and the HPLP has a 4 point Likert response format. Next, partial correlation coefficients were used to determine the relationship between definition of health and health-promoting behaviors while controlling for the effects of the demographic variables. The partial correlation coefficient reflects the relationship between the two variables (definition of health and health-promoting

behaviors) after the overlap or factors each have in common with the demographic variables have been removed from the analysis (Shelley, 1984; Waltz & Bausell, 1981). More specifically, partial correlation coefficients were used to determine the relationship between the subject scores on: (a) the subscales of the LHCS and the subscales of the HPLP, (b) the subscales of the LHCS and the total score on the HPLP, (c) the subscales of the HPLP and the total score on the LHCS, and (d) the total LHCS and the total HPLP.

Because the LHCS and the HPLP scales are relatively new, alpha reliability coefficients were done on both scales. Coefficient alpha, developed by Cronbach (1951), should be calculated each time a measure is used because an alpha value obtained in one situation is not generalizable to other situations (Waltz & Bausell, 1981).

Ethical Considerations

The study proposal was submitted to the Ethical Review Committee, School of Nursing, University of Manitoba. Upon ethical approval from this committee (see Appendix H), a letter requesting access to the older adult sample and a copy of the proposal was sent to the Executive Director of Site A (see Appendix I). The proposal was then reviewed by the facility's ethics committee. Letters requesting access

to older adult fitness members were also sent to Site B and to Site C (see Appendix J).

In order to reduce the possibility of perceived coercion to participate in the study on the part of fitness members, both the investigator and the fitness instructors assured potential participants that their participation was voluntary. If an individual did decide to participate, he/she was free to withdraw at any time without penalty of any kind.

Assurance was given that all data collected would be confidential. All information was stored in a locked cabinet during the study. Names did not appear on the questionnaires or the demographic form. Data were available only to the investigator's advisors and a statistician, if necessary, during the course of the study. Following the completion of the study, questionnaires and personal data forms were destroyed.

No risks were anticipated during the course of data collection. There were no direct benefits to the respondents for participating in the study. An indirect benefit, however, included the recognition that they were contributing to the expansion of knowledge about health concepts and health behaviors of the elderly.

Chapter 5. Results

The purpose of this study was to explore the relationship between definition of health and health-promoting behaviors in a group of older adults. More specifically, this study explored (a) the definition of health perceived by older adults participating in fitness facilities/programs, (b) the relationship between demographic characteristics and definition of health for older adults participating in fitness facilities/programs, (c) the health-promoting behaviors of older adults participating in fitness facilities/programs, (d) the relationship between demographic characteristics and health-promoting behaviors of older adults participating in fitness facilities/programs, and (e) the relationship between definition of health and health-promoting behaviors of older adults participating in fitness facilities/programs.

This chapter describes the results of the data analysis for this descriptive correlational study. First, the definition of health and the health-promoting behavior scale results and their relationship to the demographic variables are presented. Second, the statistical results concerning the relationship between definition of health and health-promoting behaviors are shown.

Definition of Health

Laffrey's Health Conception Scale (LHCS) was used for a quantitative assessment of participants' definition of health. Table 5 shows the range of scores, mean values, and standard deviations on the LHCS for this sample of older adults. The lowest mean score for the sample was for the clinical dimension, which included items such as "being free from symptoms of disease", "not requiring a doctor's services", and "not being sick". This dimension also showed the least homogeneous scores with a standard deviation of 8.36.

Table 5

Dimension Scores and Total Score on the Laffrey Health Conception Scale (N=77)

Dimension	Score Range	Mean Score	Standard Deviation
Clinical	11-42	30.08	8.36
Functional	25-42	36.13	4.61
Adaptive	26-42	35.23	5.05
Eudaimonistic	24-42	34.69	4.73
Total Scale	96-168	136.13	18.16

The highest mean score for this sample of older adults was for the functional or role-performance dimension, which included items such as "fulfilling my daily responsibilities", "being able to function as expected", and "carrying on the normal functions of daily living".

Pearson product moment correlations were used to examine the relationships between the demographic variables and the total LHCS and its dimensions (see Table 6). Not being married was correlated with higher scores on the functional health dimension ($r=.278$, $p<.01$), the adaptive health dimension ($r=.242$, $p<.05$), the eudaimonistic health dimension ($r=.255$, $p<.05$), and the total health conception scale ($r=.292$, $p<.01$). Gender, age, education, and income were not significantly correlated with the total LHCS or its dimensions.

Table 6

Pearson Correlation Coefficients for Laffrey Health Conception Scale and Demographics (N=77)

	Laffrey Health Conception Scale				
Variables	CH	FH	AH	EH	Total Scale
Gender[a]	.141	-.059	.051	.084	.109
Age	-.037	-.004	-.055	-.074	-.071
Marital[b]	.137	.278**	.242*	.255*	.292**
Education	-.025	-.002	.145	.080	.060
Income	.005	-.006	.125	.013	.059

Note. CH = clinical health; FH = functional health; AH = adaptive health; EH = eudaimonistic health.

[a]1 = male; 2 = female. [b]1 = married; 2 = not married.

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

Correlation coefficients were then squared to obtain an estimate of the variance shared by the demographic and LHCS variables. Marital status was found to explain only 8.5% of the variance in the total LHCS scores. Marital status also explained only 7.7% of the variance in the functional health dimension scores, 5.9% in the adaptive health dimension scores, and 6.5% in the eudaimonistic health dimension scores.

Health-Promoting Behaviors

The Health-Promoting Lifestyle Profile (HPLP) was used for a quantitative assessment of participants' health-promoting behaviors. Table 7 shows the range of scores, mean values, and standard deviations on the HPLP for this sample of older adults. The average HPLP total score was 145.64, out of a range of 101 to 179.

Table 7

Dimension Scores and Total Score on the Health-Promoting Lifestyle Profile (N=77)

Dimension	Score Range	Mean Score	Standard Deviation
SA (13 items)	26-52	41.44	6.15
HR (10 items)	16-37	27.38	5.88
E (5 items)	7-20	15.39	3.08
N (6 items)	12-24	20.34	2.84
IS (7 items)	15-28	21.73	3.51
SM (7 items)	10-27	19.36	3.93
Total Scale (48 items)	101-179	145.64	16.94

Note. SA = self-actualization; HR = health responsibility; E = exercise; N = nutrition; IS = interpersonal support; SM = stress management.

A large percentage of the older adults reported engaging routinely or often in a number of specific health behaviors comprising the HPLP dimensions: eating 3 regular meals a day (88.3%); including roughage/fibre (whole grains, raw fruits, raw vegetables) in their diet (93.5%); believing that their life has purpose (78%); spending time with close friends (83.2%); engaging in recreational physical activities such as walking, swimming, soccer, bicycling (72.7%); and having their blood pressure checked and knowing what it is (69.8%).

To compare the scores of the various HPLP dimensions, the 4-point scale ranging from 1=never to 4=routinely was used (see Table 8). An examination of mean scores across all six HPLP dimensions found that older adults participating in fitness facilities/programs scored highest on the dimensions of nutrition, self-actualization, interpersonal support, and exercise. These dimensions were closely followed by the dimensions of stress management and health responsibility.

Table 8

Scores and Total Score on the Health-Promoting Lifestyle Profile (N=77)

Dimension	Possible range of scores	Actual range of scores	Mean	Standard Deviation
SA	1-4	2.00-4.00	3.19	.47
HR	1-4	1.60-3.70	2.74	.59
E	1-4	1.40-4.00	3.08	.62
N	1-4	2.00-4.00	3.39	.47
IS	1-4	2.14-4.00	3.10	.50
SM	1-4	1.43-3.86	2.77	.56
Total Scale	1-4	2.10-3.73	3.03	.35

Note. Data represent responses to a 4-point scale: 1=never; 2=sometimes; 3=often; and 4=routinely. SA = self-actualization; HR = health responsibility; E = exercise; N = nutrition; IS = interpersonal support; SM = stress management.

Pearson product moment correlations were used to examine the relationships between the demographic variables and the total HPLP and its dimensions (see Table 9). Being older was correlated with higher scores on the interpersonal support dimension ($r=.266$, $p<.05$), while having more education was

negatively correlated with higher scores on the stress management dimension (r=-.259, p<.05). Gender, marital status, and income were not significantly correlated with the total HPLP or its dimensions.

Table 9

Pearson Correlation Coefficients for Health-Promoting Lifestyle Profile and Demographics (N=77)

	Health-Promoting Lifestyle Profile						
Variables	SA	HR	E	N	IS	SM	Total Scale
Gender[a]	-.192	.052	-.161	-.003	-.011	-.049	-.100
Age	.146	-.002	-.111	.033	.266*	.081	.117
Marital[b]	-.089	-.073	-.020	-.180	-.042	-.135	-.142
Education	-.016	-.061	.071	-.190	.016	-.259*	-.124
Income	-.004	-.050	.174	-.054	.069	-.174	-.032

Note. SA = self-actualization; HR = health responsibility; E = exercise; N = nutrition; IS = interpersonal support; SM = stress management.

[a]1 = male; 2 = female. [b]1 = married; 2 = not married.

*p < .05.

Next, correlation coefficients were squared in order to estimate the variance shared by the demographic and HPLP variables. Age was found to explain only 7.1% of the variance in the interpersonal support dimension scores. Similarly, education was found to explain only 6.7% of the variance in the stress management scores.

Relationship Between Definition of Health and Health-Promoting Behaviors

The results of the correlation analysis for the Laffrey Health Conception Scale and its dimensions with the Health-Promoting Lifestyle Profile and its dimensions are shown in Table 10. Significant correlations were found on five dimensions. Higher clinical health scores on the LHCS were correlated with lower scores on the health responsibility dimension of the HPLP ($r=-.270$, $p<.05$). Statistically significant positive correlations were found between functional health on the LHCS and self-actualization on the HPLP ($r=.249$, $p<.05$), as well as between adaptive health and self-actualization ($r=.220$, $p<.05$). No other statistically significant correlations were found between the two scales.

Table 10

Pearson Correlation Coefficients of Laffrey Health Conception Scale (LHCS) with Health-Promoting Lifestyle Profile (N=77)

	Health-Promoting Lifestyle Profile						
LHCS	SA	HR	E	N	IS	SM	Total Scale
CH	.074	-.270*	-.013	-.146	.063	-.084	-.090
FH	.249*	-.112	.142	.022	.154	.061	.143
AH	.220*	-.104	.200	-.053	.128	-.007	.104
EH	.149	-.114	.128	-.167	.124	-.085	.037
Total Scale	.180	-.206	.112	-.113	.150	-.062	.028

Note. CH = clinical health; FH = functional health; AH = adaptive health; EH = eudaimonistic health.

SA = self-actualization; HR = health responsibility; E = exercise; N = nutrition; IS = interpersonal support; SM = stress management.

*$p \leq .05$.

Next, partial correlation analysis was performed to determine the relationship between definition of health and health-promoting behaviors while controlling for the effects

of age, gender, marital status, education, and income (see Table 11). The correlations identified above remained statistically significant when controlling for the demographic variables. In addition, a statistically significant positive correlation was found between the total LHCS and the self-actualization dimension on the HPLP ($r=.250$, $p<.05$).

Table 11

Partial Correlation Coefficients of Laffrey Health Conception Scale (LHCS) with Health-Promoting Lifestyle Profile. Controlled for: Gender, Age, Marital Status, Education, Income (N=77)

	Health-Promoting Lifestyle Profile						
LHCS	SA	HR	E	N	IS	SM	Total Scale
CH	.119	-.275*	.002	-.134	.083	-.067	-.062
FH	.282*	-.087	.131	.085	.190	.114	.194
AH	.274*	-.078	.192	.024	.157	.085	.177
EH	.209	-.098	.136	-.110	.174	-.022	.106
Total Scale	.250*	-.194	.115	-.051	.198	.009	.100

Note. CH = clinical health; FH = functional health; AH = adaptive health; EH = eudaimonistic health.

SA = self-actualization; HR = health responsibility; E = exercise; N = nutrition; IS = interpersonal support; SM = stress management.

*p < .05.

Finally, partial R-squared values were determined in order to estimate the variance shared by the two scales. The

clinical health dimension was found to explain only 7.6% of the variance in the health responsibility dimension scores. The functional and adaptive health dimensions were found to explain only 7.9% and 7.5% respectively, of the variance in the self-actualization dimension scores. The total LHCS was also found to explain 6.3% of the variance in the HPLP self-actualization dimension scores.

Summary

Quantitative data analysis was used in this descriptive correlational study to examine the relationship between definition of health and health-promoting behaviors in a sample of older adults participating in fitness facilities/programs. Data revealed that this sample of older adults perceived a multidimensional definition of health. Of the sample demographic characteristics, only marital status showed a significant correlation with definition of health.

Data also showed that these older adults reported participation in a wide range of actual health-promoting behaviors. Being older was positively correlated with behaviors representing interpersonal support, while having more education was inversely correlated with behaviors representing stress management. Three dimensions of health were correlated with two dimensions of health-promoting behaviors.

Chapter 6. Discussion and Implications

The purpose of this study was to explore the relationship between definition of health and health-promoting behaviors in a group of older adults. This study explored (a) the definition of health perceived by older adults participating in fitness facilities/programs, (b) the relationship between demographic characteristics and definition of health for older adults participating in fitness facilities/programs, (c) the health-promoting behaviors of older adults participating in fitness facilities/programs, (d) the relationship between demographic characteristics and health-promoting behaviors of older adults participating in fitness facilities/programs, and (e) the relationship between definition of health and health-promoting behaviors of older adults participating in fitness facilities/programs.

This chapter will discuss both the definition of health and the health-promoting behavior findings as they were examined in this sample of older adults. In addition, conceptual and nursing implications of the study findings are presented, along with study limitations and considerations for future research. The chapter closes with a brief summary.

Definition of Health

Data from the LHCS suggest that in this study older adults define health more broadly than the mere absence of disease or illness. Respondents, however, do not totally discount this aspect of health, but questionnaire data suggest that they emphasize functional, adaptive, and self-actualizing aspects of health. Interestingly, the functional dimension of the LHCS was emphasized by this sample of older adults.

Possibly, the potential or actual loss of performance capacities has sensitized these older adults to the functional aspect of health. On an individual level, notions about disability and loss of function in older age may have contributed to this finding. Alternatively, support for functional health may reflect, in part, the values and beliefs present in society. The defining of health in a functional way is an important example of how the North American value system and social structure place particular emphasis on the fulfillment of role obligations (Doyle, 1981). It is concerned with people's ability to carry out their normal roles and activities. Thus, these older adults' agreement with the functional health dimension would appear to be consistent with the North American value system.

Of particular note, is this group of older adults general agreement with all four dimensions of health comprising the LHCS. These older adults have a much broader notion of health than simply the clinical or functional dimension of health. It suggests agreement with the broadening definition of health that has occurred over the years. It appears older adults are not immune from the societal trend toward holistic health. The idea of holistic health includes high-level wellness and the realization of potentials; the eudaimonistic items in the LHCS focus on this aspect of health.

By defining health as an all-embracing and multifaceted concept, these older adults may actually be giving expression to society's notions of well-being or quality of life. After all, health is intertwined conceptually and practically with the social, moral, and political aspects of society (Van Der Geest, 1985).

At the same time, there were significant relationships between not being married and functional, adaptive, eudaimonistic, and total health conception scores. These results provide limited support for Pender's (1987) proposition that demographic factors are associated with cognitive-perceptual factors. Although, from Pender's model it is not clear if there is a direct relationship between

demographic characteristics and cognitive-perceptual factors. It is possible that these dimensions of health have particular relevance in the lives of older adults who find themselves alone. This finding is not surprising if one considers that health is a concept grounded in the experiences and concerns of everyday life (Crawford, 1984). Asking older adults to define health probably evoked reflections about the quality of their physical, emotional, and social experiences. Meanings that emerge from these experiences may or may not conform to dominant societal notions about health.

Experiences of socioeconomic status, sex, and age may also serve to filter dominant societal values and conceptions. The result may be an internalization of dominant values and conceptions, or a resistance to and transformation of those systems of meaning (Crawford, 1984). In this society, health is often viewed in an individualistic way, and this is reflected in the LHCS where the individual copes, adapts, or lives life to the fullest.

The trend in the study data toward a negative correlation between some of the demographic variables, for example age, and the health dimensions may indicate a resistance to these definitions. A few older adults offered the comment, "You can have physical problems and still be

healthy. It depends what they are and how severe". Another person added, "Defining health is very subjective. I can see someone who is younger viewing health quite differently than someone who is older with health problems". These comments suggest a serious questioning of the health description items present in the LHCS. They also suggest that a person's current health status may play a role in how health is defined.

The small percentage of variance in the health conception scores accounted for by the marital status variable suggests other factors are also associated with older adults' perceived definition of health. These factors probably vary depending on the person and the context. Individuals are not immune from the system of values, attitudes, and beliefs that permeates society. Again, prevailing ideas, values, and beliefs in society may help to shape one's concept of health in complex ways with meanings that emerge from one's concrete physical, emotional, and social experiences.

For example, prevailing notions of health such as "Being able to change and adjust to demands made by the environment" and "Adapting to things as they really are, not as I'd like them to be" may be contested by respondents because of their own concrete life experiences. They may

question this idea of adaptation to the environment as adaptive for whom? In other words, meanings that emerge from their own physical, emotional, and social experiences may serve to resist these prevailing notions of health. One woman also criticized the descriptions of health by stating, "Health is how I am feeling. I know when I am healthy. Health depends on how I feel at a particular time."

The definition of health findings, however, must be interpreted cautiously. Although a reliability analysis revealed that respondents were consistent in their views throughout the instrument, the high intercorrelations among the functional, adaptive, and eudaimonistic health dimensions suggest that these dimensions were not measuring relatively distinct dimensions of health conception in this sample of older adults. A single dimension appears to underly these three subscales of the LHCS. Therefore, rather than measuring four dimensions of health, the instrument appears to be tapping only two dimensions of health conception in this sample of older adults. Or alternatively, the instrument items are not adequately tapping the functional, adaptive, and eudaimonistic dimensions of health.

The results of this study are consistent with previous research exploring individuals' definitions of health. The

lower mean score for the clinical health dimension was reported both for graduate nursing students (Laffrey, 1986) and for adults with disabilities (Stuifbergen et al., 1990). The higher mean score for the functional health dimension was also found in the sample of adults with disabilities (Stuifbergen et al., 1990). In contrast, Laffrey (1986) found the highest mean score for a sample of graduate nursing students to be the eudaimonistic health dimension.

Of particular note in these studies with different populations, is the support for all four health dimensions. Despite different population characteristics in terms of disability, chronic illness, age , and health education, the similarity in health conception scores across the studies suggests agreement in how health is conceptualized.

Not surprisingly, adults with disabilities and older adults, some of whom reported chronic illness, would emphasize functional health. As previously stated, this may be attributed to both the prevailing social definition of health that emphasizes ability to carry out roles, and the individual's personal physical and social experiences.

The emphasis on the eudaimonistic health dimension by the graduate nursing students (Laffrey, 1986) may actually reflect their greater socialization into this aspect of health. Spector (1979) explains that as one is socialized

into the provider culture, via the educational process, one's understanding of health changes. The connotation of the word "health" may become that contained in the World Health Organization (1984, 1986) definition or some other recognized authority. At the same time, and possibly more subtly the public is exposed to the same explicit and implicit definitions of health; definitions shaped by the institutions of society including government, mass media and communication systems, and cultural systems.

The tendency for individuals to define health as a multidimensional concept is a common theme represented in European and North American findings of lay concepts of health. In fact, similar descriptions of health are reported across a number of studies. These descriptions of health include those represented in the present study: absence of disease/illness/symptoms (Baumann, 1961; Boyle & Counts, 1988; Calnan & Johnson, 1985; Colantonio, 1988; d'Houtaud & Field, 1984; Herzlich, 1973; Morse, 1987; Williams, 1983; Woods et al., 1988); fulfillment of social roles/functional capacity (Baumann, 1961; Boyle & Counts, 1988; Calnan & Johnson, 1985; Colantonio, 1988; d'Houtaud & Field, 1984; Hanna, 1989; Morse, 1987; Parse, Coyne, & Smith, 1985; Williams, 1983; Woods et al., 1988); flexible adjustment to changing circumstances/ability to adapt (Calnan & Johnson,

1985; d'Houtaud & Field, 1984; Morse, 1987; Woods et al., 1988); and exuberant well-being/self-realization (Baumann, 1961; Calnan & Johnson, 1985; Colantonio, 1988; d'Houtaud & Field, 1984; Hanna, 1989; Herzlich, 1973; Morse, 1987; Parse, Coyne, & Smith, 1985; Woods et al., 1988). Although additional health themes appear in these studies, the emergence of the above core health concepts in groups divergent in age, life experience, and nationality lends support to a general western societal notion of health.

Relationship between demographic characteristics and definition of health.

With respect to the relationship between demographic characteristics and definition of health for older adults participating in fitness programs, only marital status showed a correlation with definition of health. Unfortunately, other studies did not consider marital status as a correlate of health definition. Age, sex, education, and socioeconomic status have been the factors most frequently examined for their correlation with definition of health.

In regard to age and sex differences, the data in this study did not reveal any significant correlations between definition of health and age or gender. Likewise, Colantonio (1988) found no significant differences in health concepts

across age groups or between sexes. At the same time, education and income were not significantly correlated with health definition in the present study. In contrast, other studies did report finding differences according to education and socioeconomic status (Baumann, 1961; Calnan & Johnson, 1985; d'Houtaud & Field, 1984; Woods et al., 1988).

As Calnan and Johnson (1985) suggest, the social class differences in concepts of health found in these studies may be the result of the social context of the interviews. Those individuals with more education and greater economic standing may be more adept at giving their views about abstract concepts, and articulating those views to a middle class interviewer. On the other hand, the administration of the same quantitative measurement instrument to all participants in the present study gave respondents the opportunity to agree/disagree with the same statements. The fact that education and income were not significantly correlated with definition of health may be a more accurate reflection of the situation.

An alternative explanation for not finding significant correlations between definition of health and education or income in the present study is perhaps due to the sample, itself. This group of older adults is socioeconomically relatively homogeneous despite education and economic

differences. The education and income levels reported in this study suggest a middle class sample. It is possible that in a more heterogeneous population, differences in socioeconomic status may be found to be associated with differences in health definitions.

Overall, the results of this study would tend to support Payne's (1983) idea that traditional views of health, with disease as the central focus, have been supplanted by complex, multidimensional concepts of health. Certainly, the older adults who participated in this study appeared to support the clinical, functional, adaptive, and eudaimonistic concepts of health put forth by Smith (1981, 1983). Similarly, these core health concepts have emerged in a number of other studies reported in the literature.

Health-Promoting Behaviors

Data from the HPLP suggest that in this study older adults report engaging in a number of health-promoting behaviors with varying frequency. The regularity with which this sample of older adults practice the six health-promoting behavior dimensions ranged from never to routinely. However, questionnaire data suggest that on average, respondents indicate that they engage often in nutrition, self-actualization, interpersonal support,

exercise, stress management, and health responsibility behaviors.

It would appear from these findings that health-promoting behaviors may be a high priority for older persons. As one man commented, "Health becomes an important concern at our age." Some caution, however, is warranted in this interpretation. There is some evidence that low rates of health behavior in older adults are associated with higher mortality (Kaplan et al., 1987; Palmore, 1970; Rotevatn, Akslen, & Bjelke, 1989). Consequently, these older adults who report health-promoting behaviors may really be the healthy survivors of their age cohort. Their health-promoting behaviors may also reflect lifelong behaviors. In addition, although the health-promoting behaviors being measured by the HPLP are recognized by experts as having health benefits, they may of course be engaged in by this sample of older adults for purposes of appearance, fitness, pleasure, or social acceptance. Indeed, these personal benefits may influence older adults' participation in health-promoting behaviors as suggested in Pender's (1987) model.

Since the Lalonde report (1974), health promotion has become a widely shared goal among the middle class of society (Crawford, 1984; Labonte & Penfold, 1981). The focus

of this health promotion effort, however, has tended to be individual lifestyle changes. No doubt this sample of older adults, participating in fitness facilities/programs, has been exposed over the years to the expectations for optimal health behavior being elaborated in the media, by government, and throughout largely middle class social networks.

It is possible that these basically middle class, retired older adults have control over the conditions of life that would allow time and energy to be devoted to health-promoting activities. Whether in the name of health, fitness, or social acceptance, health-promoting behaviors are proactive in nature and require a commitment. These older adults probably have time, money, flexible schedules, and are not being drained by strenuous job requirements; therefore, they are able to engage in a range of health-promoting behaviors.

The present study found a correlation between age and the specific health-promoting dimension of interpersonal support. Perhaps with age and the inevitable loss of friends and family more effort is made to develop and keep personal support networks. However, the cross-sectional nature of this study cautions against interpretations based on age. A longitudinal study would be needed to identify how health-

promoting behavior dimensions such as interpersonal support evolve over time.

An interesting finding is the negative correlation between education level and the health-promoting dimension of stress management. This implies either that individuals with more education are less likely to employ strategies for managing stress, or possibly that some subscale items were not particularly relevant to them. The lower reliability found for the stress management dimension of the HPLP may suggest the latter. Subscale items such as "practice relaxation or meditation for 15-20 minutes daily" and "consciously relax muscles before sleep" may not have been particularly relevant to these older adults.

Not surprising was the small percentage of variance shared by the demographic variables (age, education) and the HPLP variables (interpersonal support, stress management). It is apparent that engaging in health-promoting behaviors is a fairly complex social phenomenon; many other variables evidently are associated with this behavior.

Although no instrument norms for the HPLP have been reported in the literature, the results of this study can be compared to findings obtained in other studies that used the HPLP to measure health-promoting behaviors of older adults. In the present study, the sample mean for the total HPLP was

higher than the mean values reported for older volunteers in four separate studies in the U.S.A. (Duffy & MacDonald, 1990; Riffle, Yoho, & Sams, 1989; Speake, Cowart, & Pellet, 1989; Walker, Volkan, Sechrist, & Pender, 1988). The sample mean values for the nutrition and exercise dimensions were also higher than the mean scores reported in the American studies of older adults (Duffy & MacDonald, 1990; Riffle, Yoho, & Sams, 1989; Speake, Cowart, & Pellet, 1989; Walker, Volkan, Sechrist, & Pender, 1988). On the other hand, the self-actualization, health responsibility, interpersonal support, and stress management dimension mean scores were similar across the studies of older adults.

It is interesting to note that the HPLP dimension mean scores for older adults were similar among the American studies, yet convenience samples of older adults were recruited in different geographical areas: Southeast Texas (Duffy & MacDonald, 1990); West Virginia (Riffle, Yoho, & Sams, 1989); North Florida (Speake, Cowart, & Pellet, 1989); and the Midwest U.S.A. (Walker, Volkan, Sechrist, & Pender, 1988). In comparing the present study to the American studies, one must consider that the convenience samples in the American studies were larger. Moreover, the lower reliability scores obtained for the exercise and nutrition dimensions in the present study caution against suggesting

that the present sample of older adults, recruited from fitness facilities/programs, engages more frequently in these health-promoting behaviors.

The fact that similar findings were found in four health-promoting dimensions across the studies of older adults, despite differences in population characteristics, lends support to the notion that health-promoting behaviors may be the norm among older adults. However, the largely middle class samples recruited in these studies caution against generalizing the results to other older adults. As Norman (1987) found in his extensive review of general health behavior studies, the majority of studies found more positive health behavior to be associated with higher socioeconomic status.

In studies of adults, the relationship between demographics and health-promoting behaviors as measured with the HPLP are inconsistent. The correlation between age and interpersonal support found in the present study was not reported in other studies (Riffle, Yoho, & Sams, 1989; Speake, Cowart, & Pellet, 1989; Speake, Cowart, & Stephens, 1991; Volden et al., 1990; Walker, Volkan, Sechrist, & Pender, 1988). In some studies age has been reported as correlating positively with nutrition (Volden et al., 1990; Walker, Volkan, Sechrist, & Pender, 1988; Weitzel, 1989),

and health responsibility (Volden et al., 1990; Walker, Volkan, Sechrist, & Pender, 1988; Weitzel, 1989). However, other studies have found a negative correlation between age and nutrition (Speake, Cowart, & Pellet, 1989), and between age and health responsibility (Riffle, Yoho, & Sams, 1989). A more consistent finding has been the negative correlation between age and exercise reported in the literature (Riffle, Yoho, & Sams, 1989; Volden et al., 1990; Weitzel, 1989).

The correlation between education and stress management in the present study finds support in a study of older adults by Speake, Cowart, and Pellet (1989). Having more education was correlated with lower stress management behavior scores. At the same time, other studies found no significant correlation between education and stress management (Riffle, Yoho, & Sams, 1989; Speake, Cowart, & Stephens, 1991; Weitzel, 1989), or a positive correlation between education and stress management (Walker, Volkan, Sechrist, & Pender, 1988).

Unfortunately, the results of these cross-sectional studies of health-promoting behavior are inconsistent and ambiguous, and they do not allow one to draw any general conclusions. Even when the same measurement instrument was used, there are disparities between studies in relationships

found. These inconsistencies may indicate that the underlying relationships are, indeed, very complex.

In all cases, although demographic characteristics are correlated with the health-promoting behaviors, they explain only a small amount of the variance in the behaviors. It is obvious that health-promoting behaviors are associated with a complex interplay of personal and social factors beyond demographic characteristics. These personal and social factors may include the interpersonal influences and situational factors identified as modifying factors in Pender's (1987) model.

Relationship Between Definition of Health and Health-Promoting Behaviors

Researchers have suggested that definitions of health may be important in influencing health behaviors (Calnan & Johnson, 1985; Laffrey, 1986, 1990; Pender, 1987). The present study found a negative correlation between defining health as the absence of disease (clinical health score) and the health-promoting behavior dimension of health responsibility. As well, functional and adaptive definitions of health were positively correlated with self-actualization behavior scores in this sample of older adults.

Individual health responsibility means attending to one's own health; whereas, a clinical health definition is

medically defined and disease oriented. For these older adults, clinical health may imply a medically dominated experience in sharp contrast to more autonomous individual health responsibility behaviors. This may explain the negative correlation between these two correlates.

It is surprising that an eudaimonistic definition of health did not significantly correlate with self-actualization; whereas, functional and adaptive definitions did display positive correlations with this health-promoting behavior dimension. Many factors are probably acting to differentially influence these relationships as demonstrated by the controlling of demographic variables. With the demographic characteristics of this older adult sample controlled, there was a trend toward increased correlation between self-actualization and functional, adaptive, eudaimonistic, and total health definition scores. Perhaps other cognitive-perceptual and modifying factors such as those identified in Pender's (1987) Health Promotion Model are influencing the relationship between eudaimonistic health and self-actualization.

In any event, the high intercorrelations among the functional, adaptive, and eudaimonistic health dimensions suggest that the positive correlation between self-actualization and health definition be interpreted

cautiously. The positive correlation may actually reflect the health definition that underlies the functional, adaptive, and eudaimonistic health dimensions measured in this study of older adults. If that is the case, it does not seem unreasonable that older adults' self-actualization behavior would positively correlate with such a psycho-social definition.

Again, the small percentage of variance shared by the health definition and health-promoting behavior variables measured in this study supports the notion that engaging in health-promoting behaviors is a complex social phenomenon influenced by a number of other factors. This notion is also supported by the finding that four of the six health-promoting behaviors reported by the older adults did not significantly correlate with health definition.

Moreover, the fact that this sample of older adults supported more than one dimension of health further demonstrates the complexity of the issue. It raises a question about the practical significance of a single dimension of health correlating with a single dimension of health-promoting behavior; especially, when the older adults indicate a multidimensional definition of health and a number of health-promoting behaviors.

Finally, the relationship between health definition and health-promoting behaviors found in this study does not necessarily reflect an influence of health definition on the behaviors of these older adults. As Calnan and Johnson (1985) have indicated, the relationship may actually reflect the role of health definition in rationalizing or justifying health behaviors rather than acting as a precursor of such behaviors.

Conceptual Implications

This study demonstrates limited support for a relationship between definition of health and health-promoting behaviors as framed within Pender's (1987) Health Promotion Model. Pender's model posits significant relationships between cognitive-perceptual factors and participation in health-promoting behaviors. According to the Health Promotion Model, modifying factors such as demographic characteristics are indirectly related to participation in health behaviors through their relationship to cognitive-perceptual factors such as definition of health.

Results of this study support, in part, Pender's (1987) proposition that demographic factors are related to definition of health. In this case, however, only marital status was correlated with health definition. Gender, age,

education, and income were not significantly correlated with health definition. At the same time, however, certain demographic characteristics were also significantly correlated with health-promoting behaviors. Hence, it would not seem unreasonable to suggest that there is a direct relationship between demographic characteristics and health-promoting behaviors. In fact, very little is known about how the various correlates of health behaviors may themselves be interrelated (Norman, 1987). Indeed, Pender's (1987) model is not clear about the nature of the interrelationships among the variables. For instance, are the relationships between the variables expected to be additive or multiplicative in explaining health-promoting behaviors?

Finally, a relationship between definition of health and health-promoting behaviors was also somewhat supported by this study. Two of the six health-promoting behavior dimensions were significantly correlated with a particular health definition. These correlations remained significant after controlling for the demographic characteristics. However, less than 9% of the variance in health-promoting behaviors was accounted for by the statistically significant correlations found in this study. Obviously, other factors are associated with health-promoting behaviors.

Health-promoting behaviors are actions that probably have numerous social, psychological, and biological influences as depicted in Pender's Health Promotion Model. In this study only two factors, namely, definition of health and demographic characteristics were examined for their relationship to health-promoting behaviors. Other studies of older adults have used multivariate analyses to investigate the relationship between other cognitive-perceptual factors identified in Pender's model and health-promoting behaviors (Riffle, Yoho, & Sams, 1989; Speake, 1987; Speake, Cowart, & Pellet, 1989). These cognitive-perceptual factors have included perceived control of health and perceived health status. The most variance in health-promoting behaviors explained by these cognitive-perceptual variables was only 24%. Several other factors proposed in Pender's model have yet to be investigated for their relationship to older adults' health-promoting behaviors. They need to be examined for their impact on explaining the variance in health-promoting behaviors.

In contrast to the emphasis on examining demographic and cognitive-perceptual correlates of health-promoting behavior, there has been little work on environmental or social factors. Pender's (1987) model identifies interpersonal factors such as expectations of significant

others, or the extent to which one's family or social network engage in particular health-promoting behaviors as modifying influences on health-promoting behaviors. In this study many older adults, participating in fitness programs, appeared to know each other and socialize after their fitness classes suggesting the possibility that interpersonal factors may be related to their health-promoting behaviors. In addition, Pender's (1987) model identifies situational factors such as health-promoting options available as important modifying influences on health-promoting behaviors. According to Pender (1987), the availability of a range of behavioral options such as health-promoting dietary choices and facilities for exercise increases the opportunity to make responsible choices. It, therefore, seems reasonable to assume that factors in the immediate situation where the behavior occurs will have a role in the health-promoting behaviors of older adults but this requires investigation.

Nevertheless, in linking the present study findings to the societal context in which this older adult sample lives, certain limitations in Pender's model are apparent: First, the scientific narrowness of the health promotion model with its focus, solely, on lifestyle in order to achieve individual well-being; second, the emphasis on individuals

as the primary agents in modifying the effects of their environment; and third, a social context focused on interpersonal relations with significant others, and environs conducive to health-promoting action.

The model tends to ignore the social structural conditions of poverty, class inequality, isolation, and alienation in society that are likely to influence the very characteristics depicted in the model, including health-promoting behaviors. In the present study, the basically middle class sample of older adults probably has control over the conditions of life that would allow time and energy to be devoted to health-promoting activities. This may not be the situation for other older adults, many of whom have monetary incomes at the lower end of the income scale (Manitoba Council on Aging, 1985). Severed from the societal context, individual cognitive-perceptual factors tend to be read as the major influences on health-promoting behaviors. As a result, it is the individual who is called upon to resist an array of social forces aligned against health behavior such as advertising, institutional, and environmental constraints (Crawford, 1980). As a health promotion model for nursing, the Pender model needs to enlarge its focus to include the political, economic, and social context in which individual health-promoting

behaviors are carried out. Directing attention to the broad patterns in human behavior and societal forces that channel those behaviors in certain directions is no less humanistic than paying attention to individual behavior (Singer, 1990).

Implications for Nurses

The intent of this study was to explore the relationship between definition of health and health-promoting behaviors in a group of older adults. A number of implications for nursing have emerged from both the definition of health and the health behavior findings, and are presented here for consideration.

Because health is an important aspect of nursing practice and research, it is important for nurses to increase their awareness of their own and others' definition of health. This may involve an "unlocking" process to break down and understand the definitions of health (Spector, 1979). Persistent questioning such as "What is Health?" and "What does that mean?" may be necessary to gain a greater sensitivity to the many definitions of health. Equally important is to question from where those definitions may derive. In the present study, older adults' agreement with a broad definition of health that goes beyond a clinical dimension appears to be a common theme in the research literature. If one considers that macro-level forces in

society are not external to individual values and beliefs, then nurses must ask who creates and defines the dominant notions of health and to what end. Health, then, must be viewed within a societal context. At the same time, nurses need to be cognizant of the implicit meanings in the various concepts of health, and how older adults' own physical, emotional, and social experiences may serve to resist such meanings.

The finding that older adults have positive views of health incorporating notions of well-being and quality of life has implications for how nurses assess the health of older adults, and for the kind of health messages they impart to older people. If health indicators were to be based on the findings in this study, more emphasis would be placed on the functional, adaptive, and eudaimonistic aspects of health, as opposed to an emphasis on morbidity factors such as number and type of chronic illness. Likewise, health messages to older adults would convey that nurses view older adults' health as more than just prevention and coping with disease and illness.

Nurses identify the promotion of health in individuals and groups as an important nursing function (Canadian Public Health Association, 1990). This study demonstrates that older adults participating in fitness programs may engage

often in a number of health-promoting behaviors. The challenge for nurses, in this case, is to recognize the strengths of this group and reinforce their efforts to promote health. In addition, nurses need to recognize these older adults as an important resource in health education. Finally, nurses need to build on what older persons already know and do in terms of their health; this means moving beyond individual lifestyle to consider other influences on health.

The relationship between definition of health and health-promoting behaviors of older adults remains ambiguous. In this study, older adults' definition of health was multidimensional and was not correlated to any great extent with their health-promoting behaviors. The nurse must appreciate that health definition may have more societal implications than it has clinical implications for health-promoting behavior.

Lastly, while needing to recognize individual efforts at health-promoting behaviors and possible psychological influences, nursing in general must not ignore the societal level where political, economic, and social pressures may make people behave as they do. In this study, middle class status may have been an important influence on health-promoting behaviors. An understanding of societal forces and

how they shape people's lives is necessary for nurses to promote health in individuals and groups (Butterfield, 1990).

Limitations

Several limitations of this study are recognized. The study sample was a small convenience sample of volunteers. This convenience sampling may have biased the sample to include older respondents atypical with regard to the variables measured. In addition, although the sample was drawn from various community sites, the volunteers were recruited from fitness facilities/programs; this may have biased the sample to include older people who were more health conscious.

The participants in this study were, on the average, slightly more educated than the older adult population in Manitoba. The majority of participants also had incomes above the Canadian low-income cutoff lines. In general, they represent a fairly middle class sample. The use of such a convenience sample, therefore, limits the ability to generalize the findings.

Other methodological limitations include the use of self-reports to measure health behavior. Respondents may have had difficulty in recalling the frequency of behaviors. However, it's possible that many health-promoting behaviors

are continuing, longstanding activities which respondents can accurately report.

There is also the possibility that social desirability played a part in the self-reports. Some people may have consciously or unconsciously distorted their self-reported characteristics in order to present themselves in a positive light. Such distortions are of particular concern in the reporting of health definition and health behaviors because of the strong societal value attached to health. Hopefully, conditions of anonymity and confidentiality helped to counter this problem.

Another limitation concerns the limited use of the tools which measured health definition and health-promoting behaviors. Both measurement instruments are relatively new and do not have a long history of use. The Laffrey Health Conception Scale was internally consistent, but it showed some redundancy among three of its dimensions in this sample of older adults. The Health-Promoting Lifestyle Profile, on the other hand, did not show any redundancy within its scale, but it did show lower internal consistency in three of its dimensions. In light of these limitations, the findings of this study must be viewed cautiously before any generalizations can be made concerning the health definition

and health-promoting behaviors of older adults participating in fitness programs.

Future Research Considerations

A number of possible directions for future research have arisen from this study. First is the need to further refine the research instruments used to measure older adults' health definition and health-promoting behaviors. Further reliability and validity testing of the LHCS and the HPLP with larger groups of older adults would enhance the use of these instruments in research with older adults. Incorporating a qualitative component by interviewing respondents would allow respondents to elaborate on the reasons for their responses to items on the scales. This method could provide additional insights into older adults' definition of health and health-promoting behaviors. It also could provide insights into how the various scale items are interpreted by older adults.

A recommendation is made to replicate this study using a larger, more heterogeneous sample and to include additional variables. A random sample of older adults should be used and an effort made to include more varied socioeconomic populations. Also, since the definition of health and demographic variables measured in this study accounted for only a small portion of the variance in health-promoting

behaviors, identification and study of other factors that may be associated with health-promoting behaviors are recommended. The other cognitive-perceptual and modifying factors identified in Pender's (1987) model are supported by research findings from the health promotion literature and warrant further investigation.

Unfortunately, Pender's (1987) Health Promotion Model encourages an almost exclusive attention to personal factors such as cognitive-perceptual factors in research on health-promoting behaviors. Abstracted from the societal context, examination of health-promoting behaviors from within such a model fosters inadequate consideration of possible social, political and economic influences on behaviors. In fact, more attention to social factors and their possible influence on health-promoting behaviors appears warranted. This may require an analysis of the lived experiences of older adults in society. Indeed, a combination of qualitative and quantitative research techniques may provide more information about the health-promoting behaviors of older persons.

Also, any correlations found in the present study can only provide clues as to possible factors which influence health-promoting behaviors; they do not provide direct evidence for a causal relationship. Additional experimental

research is necessary to confirm a causal relationship before one can conclude that health definition influences health-promoting behaviors. Such research may provide nurses, interested in psychological influences, with effective levers to use in health education programs aimed at influencing health behaviors.

Finally, to address the issue of age and its correlation with health-promoting behaviors, longitudinal studies are needed to identify how these behaviors evolve over time. Cross-sectional studies are confounded by a number of factors. Age group differences at a single point in time could reflect maturational, historical, and mortality effects. Longitudinal studies of health-promoting behaviors over time could help to resolve some of these problems.

Summary

The purpose of this study was to explore the relationship between definition of health and health-promoting behaviors in a group of older adults. More specifically, the study explored the definition of health and health-promoting behaviors of older adults participating in fitness facilities/programs.

The findings of this study tend to support the notion that traditional views of health, with disease as the focus, have been replaced by a more multidimensional view of

health. The older adults who participated in this study appeared to support clinical, functional, adaptive, and eudaimonistic concepts of health. These core health concepts were also evident in a number of other studies reported in the literature, thereby, giving credence to the findings.

The small percentage of variance in the health conception scores accounted for by the demographic variables in this study indicates that other factors are associated with older adults' perceived definition of health. It is postulated that these factors probably vary depending on the person, context, and prevailing ideas, values, and beliefs in society.

The study demonstrated that this sample of older adults, who participate in fitness facilities/programs, engage often in a number of health-promoting behaviors. This finding is consistent with American studies that used the Health-Promoting Lifestyle Profile to examine older adults' health-promoting behaviors. Only two demographic characteristics were correlated with the health-promoting behaviors of older adults and explained only a small amount of the variance in the behaviors. Like health definition, it is apparent that health-promoting behaviors are associated with a complex interplay of personal and social factors beyond demographic characteristics.

The study demonstrated limited support for a relationship between definition of health and health-promoting behaviors as framed within Pender's (1987) Health Promotion Model. Only two health-promoting behaviors were correlated with a particular health definition. Only a small percentage of the variance in health-promoting behaviors was accounted for by the statistically significant correlations found in the study.

In light of the study findings and limitations, the relationship between older adults' definition of health and their health-promoting behaviors remains ambiguous. Nevertheless, there is some indication that health definition may have limited clinical significance as a factor in health-promoting behaviors.

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Appendix A

Permission/Laffrey Health Conception Scale

School of Nursing
Department of Mental Health,
Community and Administrative
Nursing
San Francisco, California
94143-0608
415/476-1504

UCSF
University of California, San Francisco...A Health Sciences Campus

July 10, 1989

Kimberley Hogg

Winnipeg, Manitoba
Canada R

Dear Ms. Hogg:

Thank you for your interest in the Laffrey Health Conception Scale. Enclosed is a copy of the most recent form of the LHCS with scoring information. Initial support for content and construct validity and internal consistency are described in the enclosed "Overview of the LHCS." Work on validity and reliability establishment is continuing. To assist in this process, I would appreciate receiving the following from you should you use the instrument:

1. Ranges, means and standard deviations of the subscores and total LHCS scores for your population
2. Demographic information for your population (i.e. age, sex, race, ethnicity and description of population such as orthopedic, cardiovascular inpatients, etc.)
3. Any reliability estimates that you do as part of your study
4. A summary of your results

These data will assist in the further development of the validity and reliability of the LHCS and also contribute to the development of a normative data base. Data which you provide me will be used for this purpose only.

I hope you find the LHCS useful in your research. Please contact me with any questions or comments you have about the scale and its use in your research.

Sincerely,

Shirley Cloutier Laffrey, Ph.D., R.N.
Associate Professor

Enc.

HEALTH CONCEPTION SCALE

Below are 28 statements to describe the meaning that "health" or "being healthy" may have for an individual. Depending on your personal conception of health, you may agree or disagree with the statements. Beside each statement is a scale which ranges from strongly disagree (1) to strongly agree (6). For each item, we would like you to circle the number which best represents the extent to which you disagree or agree with the statement. The more strongly you disagree with a statement, then the lower will be the number you circle. The more strongly you agree with a statement, then the higher will be the number you circle. Please make sure that you answer every item and that you circle only one number per item. This is a measure of your personal conception of health; there are no right or wrong answers.

"Health" or "being healthy" means:	Strongly Disagree	Moderately Disagree	Disagree	Agree	Moderately Agree	Strongly Agree
1. Feeling great - on top of the world	1	2	3	4	5	6
2. Being able to adjust to changes in my surroundings	1	2	3	4	5	6
3. Fulfilling my daily responsibilities	1	2	3	4	5	6
4. Being free from symptoms of disease	1	2	3	4	5	6
5. Being able to do those things I have to do	1	2	3	4	5	6
6. Not requiring a doctor's services	1	2	3	4	5	6
7. Creatively living life to the fullest	1	2	3	4	5	6
8. Adjusting to life's changes	1	2	3	4	5	6
9. Not requiring pills for illness or disease	1	2	3	4	5	6
10. Being able to function as expected	1	2	3	4	5	6
11. Not being under a doctor's care for illness	1	2	3	4	5	6
12. Facing each day with zest and enthusiasm	1	2	3	4	5	6

	Strongly Disagree	Moderately Disagree	Disagree	Agree	Moderately Agree	Strongly Agree
13. Being able to cope with stressful events	1	2	3	4	5	6
14. Being able to change and adjust to demands made by the environment	1	2	3	4	5	6
15. Not being sick	1	2	3	4	5	6
16. Actualizing my highest and best aspirations	1	2	3	4	5	6
17. Adequately carrying out my daily responsibilities	1	2	3	4	5	6
18. Living at top level	1	2	3	4	5	6
19. Adapting to things as they really are, not as I'd like them to be	1	2	3	4	5	6
20. I do not require medications	1	2	3	4	5	6
21. Carrying on the normal functions of daily living	1	2	3	4	5	6
22. Coping with changes in my surroundings	1	2	3	4	5	6
23. Realizing my full potential	1	2	3	4	5	6
24. Fulfilling my responsibilities as a husband/wife/son/daughter/friend/worker, etc.	1	2	3	4	5	6
25. Having no physical or mental incapacities	1	2	3	4	5	6
26. Performing at the expected level	1	2	3	4	5	6
27. Not collapsing under ordinary stress	1	2	3	4	5	6
28. My mind and body function at their highest level	1	2	3	4	5	6

Appendix B

Permission/Health-Promoting Lifestyle Profile

Northern Illinois University
DeKalb, Illinois 60115-2854

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

July 26, 1989

Kimberley Hogg

Winnipeg, Manitoba
Canada
R

Dear Ms. Hogg:

You have permission to use the 48-item Health-Promoting Lifestyle Profile in your study of health-promoting lifestyle behaviors among older adults. You may have copies made from the form which is enclosed. Content should not be altered in any way and the copyright/permission statement at the end must be reproduced.

There is no charge for approved research use, but I would appreciate receiving a complete report of your study for our files. We are particularly interested in information about scores (range, mean and standard deviation) on the Lifestyle Profile, reliability coefficients, and correlations with other measured variables.

I am enclosing a list of published studies and a list of completed dissertations which have used the Lifestyle Profile, as well as a summary of the preliminary findings from my current work. Our four recently completed studies within the Health Promotion Research Program have supported the reliability and validity of the instrument for use with older adults, corporate fitness program participants, ambulatory cancer clients, and cardiac rehabilitation program participants. We are now preparing reports of these studies for publication.

Best wishes with your study.

Sincerely,

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

Encl.

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

Appendix C

Demographic Information

Please circle the appropriate response.

(1) male (2) female

How long have you been participating in this fitness program?

(1) less than 6 months
(2) 7 months - 12 months
(3) 13 months - 2 years
(4) more than 2 years

How old were you on your birthday?

_____ years old

Marital Status:

(1) Single
(2) Married
(3) Separated
(4) Divorced
(5) Widow(er)

Education, circle the highest number of years completed.

Grade School	1	2	3	4	5	6	7	8
High School	9	10	11	12	13			
University or Post Secondary	14	15	16	17				
Graduate	18	19	20	21				

In what range was your household income last year?

(1) under $10,000
(2) 10,000 - 19,999
(3) 20,000 - 29,999
(4) 30,000 - 39,999
(5) 40,000 - over

Are you currently employed?

(1) Yes (2) No

If yes, what is your job? _____

If no, what was your previous occupation? _____

_____

How would you describe your health now compared to last year?

about the same better worse

How would you describe your health now compared to others your age?

about the same better worse

Have you been told you have a chronic illness?

yes no

If yes, please specify _____

_____

Appendix D

Laffrey Health Conception Scale

Scoring Instructions

An individual's score on the LHCS is obtained for each dimension of health conception and then for the total scale. The score for each dimension is obtained by summing the score of the items:

Clinical Health Score = Items 4 + 6 + 9 + 11 + 15 + 20 + 25

Role Performance/Functional Health Score = Items 3 + 5 + 10 + 17 + 21 + 24 + 26

Adaptive Health Score = Items 2 + 8 + 13 + 14 + 19 + 22 + 27

Eudaimonistic Health Score = Items 1 + 7 + 12 + 16 + 18 + 23 + 28

The total score = Items 1 to 28

Appendix E

Health-Promoting Lifestyle Profile

Scoring Instructions

An individual's score on the HPLP is obtained for each subscale and then for the total scale. The score for each subscale is obtained by summing the scores of the items:

Self-actualization = Items 3, 8, 9, 12, 16, 17, 21, 23, 29, 34, 37, 44, 48

Health Responsibility = Items 2, 7, 15, 20, 28, 32, 33, 42, 43, 46

Exercise = Items 4, 13, 22, 30, 38

Nutrition = Items 1, 5, 14, 19, 26, 35

Interpersonal Support = Items 10, 18, 24, 25, 31, 39, 47

Stress Management = Items 6, 11, 27, 36, 40, 41, 45

The total score = Items 1 to 48

Scoring

Never (N) = 1

Sometimes (S) = 2

Often (O) = 3

Routinely (R) = 4

Appendix F

Explanation of the Study

You are invited to participate in a research study. The study is concerned with health-promoting behaviors of older adults and what health means to them. If you are 55 years of age or older, a fitness member, and live in the community then you are eligible.

This study is being conducted by Kim Hogg, a student in the Master of Nursing program at the University of Manitoba, Winnipeg, Manitoba. The investigator's thesis advisor is Professor Cynthia Cameron, School of Nursing, University of Manitoba (474-8240).

Your participation in the study is solely on a voluntary basis. Your part in this study will involve completing a questionnaire on the meaning of health and a questionnaire on the health behaviors you carry out. There are no right or wrong answers; the questions pertain to you and how you feel about them. You will also be asked a few questions about your age and personal background. Your participation in this study should take no more than 30 minutes of your time.

The study will be conducted after your fitness class in the following weeks or at a mutually convenient time. All information will remain confidential; your name will not be recorded. The questionnaires will be identified only by code

number. If you do decide to participate, you will be free to withdraw at any time. You will also be free to answer only those questions you feel comfortable in answering.

I appreciate your consideration of this invitation to participate.

Yours sincerely,

Kimberley Hogg

Appendix G

Consent Form

This certifies that I, _____,
agree to participate in the study conducted by Kim Hogg, a Master's Student in Nursing at the University of Manitoba. This study is concerned with health-promoting behaviors of older adults and what health means to them. I have been given an explanation of the study and have had an opportunity to ask questions.

I understand that my participation will involve completing a questionnaire on health-promoting behaviors and a questionnaire on the meaning of health. There are no right or wrong answers; the questions pertain to me and how I feel about them. I will also be given a short form to complete which asks a few questions about my age and personal background. It will probably take no more than 30 minutes of my time to complete the questionnaires.

I understand that information I give will be compiled with other respondents. My name will not be recorded; my identification will remain anonymous. It will not be possible to identify me in any future publication that might arise from this study.

I have been informed that all information will be stored in a locked cabinet during the study; all questionnaires

will be destroyed at the conclusion of the study. I understand that I am participating voluntarily and that I am free to withdraw at any time. I am also free to answer only those questions I feel comfortable in answering. I understand that my participation will be of no direct benefit to me but will contribute to knowledge on health of older people.

If necessary, I am aware that I may contact Kim Hogg at or her advisor, Professor Cynthia Cameron, at during the study. My signature below indicates my willingness to participate in the study.

Date: _____ _____ _____

(Participant) (Investigator)

I would like a summary of the results of this study made available to me at this fitness facility.

Yes _____ No _____

Appendix H

Ethical Approval

The University of Manitoba

SCHOOL OF NURSING

ETHICAL REVIEW COMMITTEE

Proposal Number N#90/11

Proposal Title: "The Relationship Between Definition of Health and Health-Promoting Behaviors of Older Adults Participating in Fitness Facilities/Programs."

Name and Title of Researcher(s): Kimberley Hogg
Master of Nursing Graduate Student
University of Manitoba

Date of Review: May 07, 1990.

Decision of Committee: Approved: May 17/90 Not Approved: _____

Approved upon receipt of the following changes:

APPROVED with changes submitted on May 16, 1990.

Date: May 17, 1990

Theresa George, RN, PhD. Chairperson
Associate Professor
University of Manitoba
Position

NOTE:

Any significant changes in the proposal should be reported to the Chairperson for the Ethical Review Committee's consideration, in advance of implementation of such changes.

Appendix I

Letter Requesting Access: Site A

Winnipeg, Manitoba
R
( )

May 22, 1990

Executive Director
Fitness Facility
Winnipeg, Manitoba

Dear Executive Director:

As a Masters' student in nursing at the University of Manitoba, I am conducting research in the area of health and aging. Specifically, I plan to examine the definition of health and the health-promoting behaviors of older adults. Enclosed please find a proposal which includes a further explanation of the study. The purpose of this letter is to request access to your facility for the recruitment of volunteers from the fitness program.

The study is being supervised by a thesis committee consisting of C. Cameron, Associate Professor, School of Nursing, (Committee Chairperson); K. Chalmers, Assistant Professor, School of Nursing; M. Searle, Associate Professor, Faculty of Physical Education and Recreation Studies. All of the above committee members are currently at the University of Manitoba. Ethical approval for the study has been received from the Ethical Review Committee, School of Nursing in May, 1990. Evidence of approval by the Committee is also enclosed.

The time requirements for the study volunteers should not be more than 1/2 hour. The data collection phase should be completed within 3-4 months. A summary of the study results will be submitted to the fitness facility.

I am requesting that the fitness facility Ethical Review Committee review the proposal. If you have any questions regarding the proposal, I would be pleased to meet with you at your convenience. Thank you for your time and consideration.

Yours sincerely,

Kimberley Hogg, BSN

Appendix J

Letter Requesting Access: Site B & Site C

Winnipeg, Manitoba
R
( )

September 24, 1990

Director
Fitness Facility/Program
Winnipeg, Manitoba

Dear Director:

As a Masters' student in nursing at the University of Manitoba, I am conducting research in the area of health and aging. Specifically, I am examining the definition of health and the health-promoting behaviors of older adults participating in fitness facilities/programs. The purpose of this letter is to request access to your facility for the recruitment of volunteers from the fitness program.

The study is being supervised by a thesis committee consisting of C. Cameron, Associate Professor, School of Nursing, (Committee Chairperson); K. Chalmers, Assistant Professor, School of Nursing; M. Searle, Associate Professor, Faculty of Physical Education and Recreation Studies. All of the above committee members are currently at the University of Manitoba. Ethical approval for the study has been received from the Ethical Review Committee, School of Nursing. Evidence of approval by the Committee is enclosed.

The time requirements for the study volunteers should not be more than 1/2 hour. If you have any questions regarding the study, I would be pleased to meet with you at your convenience. Thank you for your time and consideration.

Yours sincerely,

Kimberley Hogg, BSN