

FACTORS INFLUENCING HEALTH-PROMOTING BEHAVIORS
IN A LOWER SOCIOECONOMIC POPULATION

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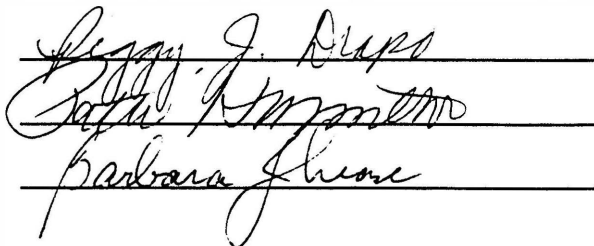
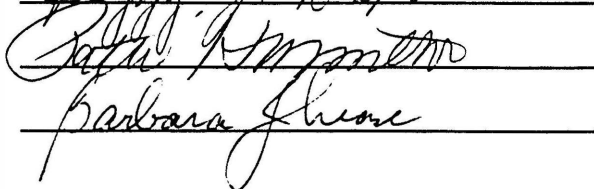
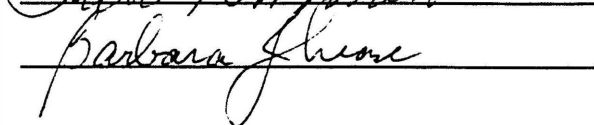
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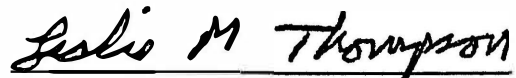
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DEDICATION

To my nieces and nephews, Shannon, Lindsey, Kendal, Dawn, Danny, Jordan, and Cody, always remember you can be whatever you want to be. Follow your heart and never give up your dreams.

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FACTORS INFLUENCING HEALTH-PROMOTING BEHAVIORS
IN A LOWER SOCIOECONOMIC POPULATION

ABSTRACT

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The study tested the Health-Promoting Model for Lower Socioeconomic Populations, by examining the direct and indirect influences of demographic characteristics, interpersonal influences, situational factors, importance of health, perceived control of health, perceived health status, and definition of health on health-promoting behaviors in a lower socioeconomic (LSE) population. Additionally, reliability and validity of the Laffrey Health Conception Scale (LHCS) and the Health-Promoting Lifestyle Profile (HPLP) were estimated for the study population. Finally, the study examined the relationship between definitions of health and health-promoting behaviors in a LSE population.

Eighty-two subjects participated in this research study. The largest percentage of the subjects were married, White females, between the ages of 18 and 30, with 10th-11th grade education. The majority of the

subjects had their own transportation and agreed that their health was very important to them, that they were in control of their health, and that they were very healthy. Family and doctors were chosen by these subjects as having the most influence on what they did to be healthy.

In the final path analysis model, the independent variables are Age, Role Definition of Health, and Perceived Health Status. Using significant beta weights, there is an indirect path from Age through Role Definition of Health to Health-Promoting Behaviors. The direct paths are from (a) Age, (b) Role Definition of Health, and (c) Perceived Health Status to Health-Promoting Behaviors.

The Cronbach's alpha for each of the subscales of the LHCS and the HPLP was greater than .70. The Cronbach's alpha for the total LHCS was .9699, and the Cronbach's alpha for the total HPLP was .9459.

Construct validity for the LHCS and the HPLP was examined. Factor analysis of the LHCS revealed four factors that explained 74.9% of the variance. Factor analysis of the HPLP revealed 13 factors that explained 77% of the variance.

The relationships between the subscales and the total LHCS and HPLP were examined. Exercise was the only subscale of the HPLP that did not correlate significantly

with any of the subscales of the LHCS. The highest correlation was between the HPLP subscale of Self-Actualization and the total LHCS score.

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CHAPTER I

INTRODUCTION

In recent years, the goals of health care have changed from a focus on the medical model of illness prevention to a focus on health promotion. Health promotion addresses the general health of the population and the development of that population to its optimal level (Duffy, 1988b). It has been estimated that at least half the deaths in the United States (U.S.) each year result from health-damaging lifestyles (Pender, 1987). Health promotion then has become a focused interest for health care and for nursing (Brubaker, 1983; Nemcek, 1986; Nugent et al., 1988). In fact, health promotion has become a high priority goal for nursing (Brubaker, 1983). However, it is unclear if individuals in all socioeconomic levels practice health-promoting behaviors. In a review of the literature, it appears that lower socioeconomic (LSE) populations are not practicing many health-promoting behaviors, or perhaps these behaviors are just not being measured properly, or perhaps health-promoting behaviors should be defined differently for these groups (Bullough,

1972; Muhlenkamp & Broerman, 1988; Muhlenkamp, Brown, & Sands, 1985; Pratt, 1971).

Health care providers and policy makers are increasingly recognizing the role that poverty plays in the general health status of LSE populations (Moccia & Mason, 1986). Over 35 million people, or approximately 15% of the total population of the U.S., are considered "poor" (Moccia & Mason, 1986, p. 20). The American Cancer Society (ACS) solicited opinions and experiences from LSE populations through a series of hearings held around the U.S. in May and June 1989 (Jordan, 1989). The ACS found that LSE populations lack access to quality health care and often do not seek needed care if they cannot pay for this care (Jordan, 1989). The ACS also found that LSE populations and their families must make extraordinary personal sacrifices--financial, physical, and psychological--to obtain and pay for health care (Jordan, 1989).

Health care providers see the need for collection of new data about LSE populations and their health practices (Moccia & Mason, 1986). Nurses, who are the largest group of health care providers in the U.S., may enhance the quality of care for LSE populations through research concerning the health practices of these groups of people.

Certain factors, including demographic characteristics, interpersonal influences, situational factors, importance of health, perceived control of health, perceived health status, and definition of health, may have a different influence on health-promoting behaviors for LSE populations compared to middle class populations. Lower socioeconomic populations often have competing survival needs, and health promotion frequently has a low priority. Nursing interventions to promote healthful behavior must be based on knowledge of and sensitivity to beliefs, definitions, and resources of the population served (Nugent et al., 1988).

Problem of the Study

This study examined the direct and indirect influences of demographic characteristics, interpersonal influences, situational factors, importance of health, perceived control of health, perceived health status, and definition of health on health-promoting behaviors in a lower socioeconomic population. Additionally, reliability and validity of the Laffrey Health Conception Scale and the Health-Promoting Lifestyle Profile were estimated for the study population. Finally, the study examined the relationship between definitions of health and health-promoting behaviors in a LSE population.

Rationale for the Study

While there has been some research conducted on the relationships between demographic characteristics, interpersonal influences, situational factors, importance of health, perceived control of health, perceived health status, definitions of health, and health-promoting behaviors, the research has not been conducted using LSE populations. Almost all of this research has been conducted using White, middle-class populations (Duffy, 1989; Fehir, 1988; Felton & Parsons, 1991; Hudak, 1988; Laffrey, 1986b). The influence of the previously mentioned factors on health-promoting behaviors among LSE populations may differ from the influences on White, middle-class populations. Researchers have not, at this point, shown that a relationship exists between the previously mentioned factors of health and health-promoting behaviors in LSE populations.

Research studies have not included the influence that socioeconomic status and resources, including financial resources, and accessibility and availability of health care have on individuals' practices of health-promoting behaviors. Also, instruments that measure health-promotion concepts have been developed using middle class populations. By conducting research with LSE populations,

the importance of socioeconomic status may be shown. For example, according to Laffrey (1985a), knowing the clients' definition of health can assist the nurse in understanding the health behavior practices of clients and in formulating health goals that are acceptable and realistic within the clients' perspective. Learning more about health behaviors of clients, and how these behaviors are viewed by the clients, is one avenue for nursing research to reach nursing's goal of assisting clients to achieve their optimal level of health (Laffrey, 1985a).

Conceptual Framework

Definitions of health and health promoting behaviors are conceptualized in several ways. Smith's (1981) Models of Health will be presented in this framework first. Then Pender's (1987) Health Promotion Model will be presented. Finally, the framework will conclude with the presentation of the Health-Promoting Model for Lower Socioeconomic Populations that was developed by the researcher. This model combines the works of Smith and Pender. This Health-Promoting Model for Lower Socioeconomic Populations was tested in the research study discussed in this paper.

Smith's Models of Health

Smith (1981) has defined health using four models: the Eudaimonistic model, the Adaptive model, the Role-performance model, and the Clinical model. These classifications of health were devised by Smith after a literature search and a philosophic inquiry.

The Eudaimonistic model defines the idea of health as general well-being and self-realization. This view of health is found in aspects of ancient Greek medicine and in the moral philosophies of Plato and Aristotle. In recent times, this idea of health has been expressed by Maslow (1954, 1962a, 1962b, 1970). It is the ideal of individuals who achieve their highest aspiration, which is fulfillment and complete development. Illness within this concept impedes or prevents self-actualization. In other words, failures in achievement and self-fulfillment are seen as assaults on health. The health extreme of the health-illness continuum in this model is exuberant well being. The illness extreme of the health-illness continuum is an enervating and languishing ability. Maslow's ideal redirects thinking away from assuming everything can be explained by seeking antecedent causes toward a holistic view where wholeness, unity, and

individuality become assumptions on which the nature of humanity is explained.

The Adaptive model is derived from a study of the writings of Dubos (1959, 1965, 1968). In this conception, health is the condition of the organism in which it can engage in effective interaction with its physical and social environment. Therefore, illness is a breakdown in the ability of the organism to cope with certain changes in its environment. In this model, even if individuals are free from illness, they may still not have attained health or effective social functioning. The health extreme of the continuum in this model is the flexible adaptation to the environment. The illness extreme of the continuum in this model includes alienation of the individual from the environment and failure of self-corrective responses.

The Role-performance model of health is based on a study of some treatises of medical sociology and some of the work of Parsons (1979) and others (DiCicco & Apple, 1960; Nisbet, 1970; Twaddle, 1974; Wilson, 1970). In this conception of health, illness is an incapacity that prevents people from doing their jobs. If nothing prevents individuals from performing their roles, then those individuals are healthy. In this model, the health

extreme of the continuum is the performance of social roles, with a maximum expected output. The illness extreme on the continuum is failure in performance of one's role. In this model, individuals may be able to perform their roles, but still be physically ill and not be able to achieve self-actualization or adapt to their environment.

Smith (1981) reviewed clinical models of medicine from Carlson (1975), Engelhardt (1975), Feinstein (1967), Grene (1976), Murphy (1976), Redlich (1976), and Toulmin (1975, 1976) to devise the Clinical conception of health. The individual is healthy, in this model, when relief is attained and the symptoms of illness are no longer present in the body or mind. In the Clinical model, the health extreme of the continuum is the absence of signs or symptoms of disease or disability as identified by medical science. The illness extreme of the continuum is the conspicuous presence of signs or symptoms of disease or disability.

Smith (1981) considered these four models as alternative ideas of health. The four models form a progressive scale of the idea of health and are related in the following way. The narrowest view of health is the Clinical model. Individuals are viewed within the

boundary of their skin and are seen as physiologic systems. According to Smith, this is a negative conception of health because it emphasizes the idea of illness, not health. In this model, individuals who have the signs or symptoms of disease can never be healthy, no matter how productive or creative they are.

Next on the scale of health is Role-performance. This model conceives the idea of health in a wider perspective. The Role-performance model adds social and psychological standards to the idea of health. The model involves the complex of social relationships and functions into which people enter because of their roles. However, this model is also limiting because it can lead to a routine, inflexible, and mechanical idea of health.

The Adaptive model incorporates the Clinical and Role-performance models. However, individuals within the Adaptive context have to be more than just physiologically healthy and perform their roles adequately. They must also show adjustment to changing circumstances through growth, expansion, and creativity. The Adaptive model views individuals as adaptive systems in relation to their social and natural environment.

The most expansive and comprehensive idea of health is the Eudaimonistic model. It embraces the three

preceding models. In addition, the Eudaimonistic conception contains the ideal of the self-actualizing, fulfilled and fulfilling, and loving personality. It is the ideal of the civilized, cultured individual who has the capacity for continuous growth, the refinement of sensibilities, and creativity.

Each of the four models lead to different goals. The Clinical and Role-performance models focus on the maintenance of stability. Their aim is physiologic and social homeostasis. In contrast, the Adaptive and Eudaimonistic models focus on change and growth.

Laffrey (1986a) developed an instrument based on Smith's (1981) Models of Health. This instrument was used in the study to measure the subjects' definition of health.

The Health Promotion Model

Health-promoting behaviors, according to Pender (1987), are continuing activities that must be an integral part of an individual's life style. They are an expression of the actualizing tendency. Health-promoting behaviors are directed toward maximizing positive arousal, such as increased self-awareness, self-satisfaction, enjoyment, and pleasure. 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's (1987) Health Promotion Model (Figure 1) is based on a synthesis of research findings from studies of health promotion and wellness behavior. The model serves three functions: "(1) introduces order among concepts that may explain the occurrence of health-promoting behavior, (2) provides for the generation of hypotheses to be tested empirically, and (3) integrates disconnected research findings into a coherent pattern" (Pender, 1987, p. 57).

Pender's (1987) Health Promotion Model is also derived from social learning theory. This theory emphasizes the importance of cognitive mediating processes in the regulation of behavior. The Health Promotion Model is organized, structurally, similar to the Health Belief Model (Becker, 1974). The determinants of health-promoting behavior are categorized into cognitive-perceptual factors (individual perceptions), modifying factors, and variables affecting the likelihood of action (cues to action). The Health Promotion Model is a proposed explanation of why individuals engage in health actions.

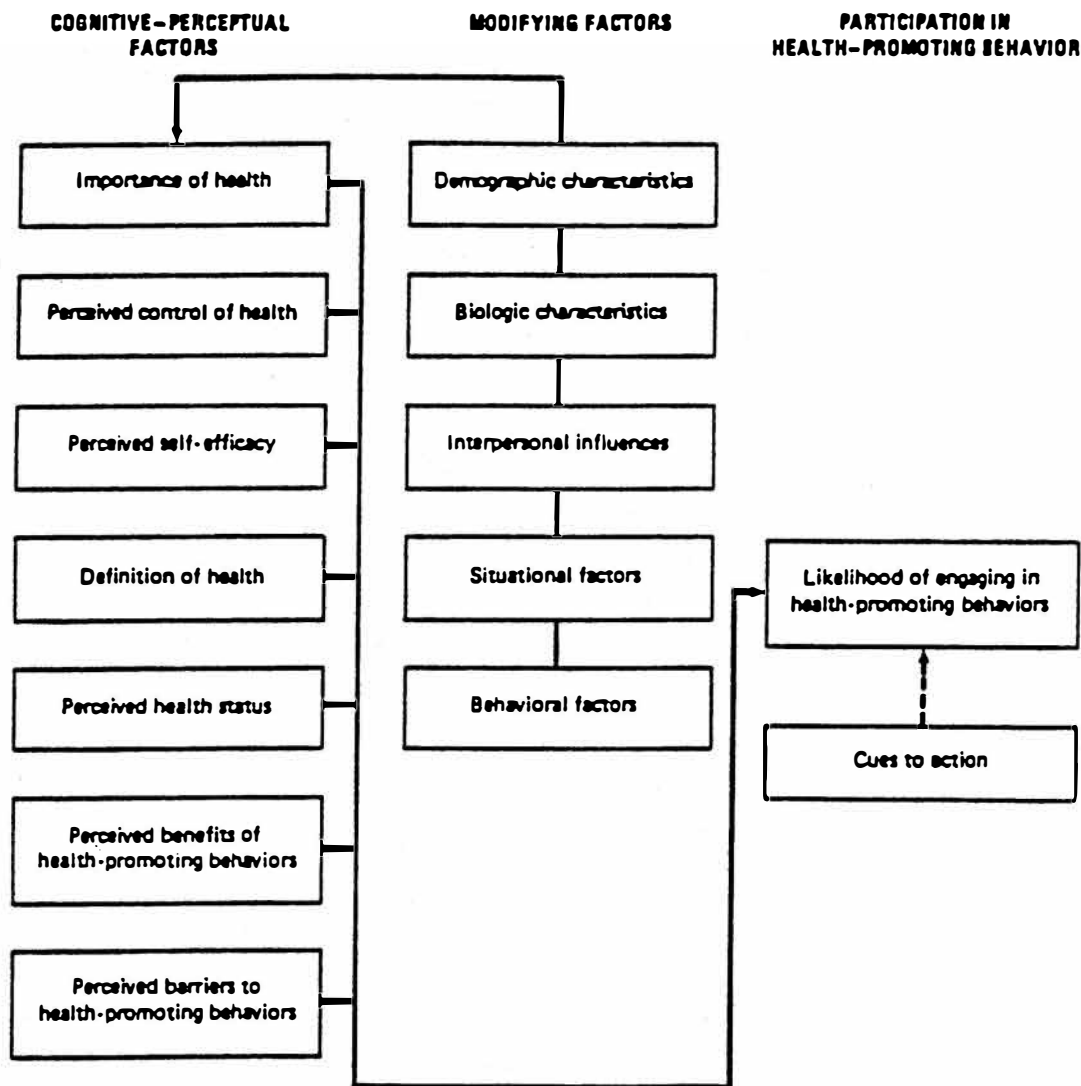


Figure 1. Health promotion model.

Note. From Health Promotion in Nursing Practice (2nd ed.) (p. 58) by N. J. Pender, 1987, Norwalk, CT: Appleton & Lange. Copyright 1987 by N. J. Pender. Reprinted by permission.

The cognitive-perceptual factors are identified within the model as the primary motivational mechanisms for obtaining and then maintaining health-promoting behaviors. Each factor exerts a direct influence on the likelihood of engaging in health-promoting actions. In this model, the cognitive-perceptual factors that influence health-promoting behaviors are "(1) importance of health, (2) perceived control of health, (3) perceived self-efficacy, (4) definition of health, (5) perceived health status, (6) perceived benefits of health-promoting behavior, and (7) perceived barriers to health-promoting behavior" (Pender, 1987, p. 60). Each of these factors will be further explained according to Pender (1987).

The "importance of health" is the impact that valuing health has on the frequency of performing health-promoting behaviors. "Perceived control of health" is the effect of one's perceived control over his or her own health behaviors. The individual needs a desire for control of health and a perceived probability of control of health status to achieve overt health-promoting behaviors. "Perceived self-efficacy" refers to an individual's conviction that he or she can successfully execute the required behavior necessary to produce a desired outcome. "Definition of health" may influence the extent to which

an individual engages in health-promoting behaviors. Because the way goals are defined often determines the means used to achieve them, differences in definitions of health might result in differing patterns of health behaviors. "Perceived health status" plays a role in the frequency and intensity of health-promoting behaviors. Experiences of increased well-being and improved health status reinforce the value of good health. This promotes more extensive changes in life style an individual may perceive as difficult to make. "Perceived benefits of health-promoting behaviors" affect the level of participation in these behaviors. Perceived benefits also facilitate continued practice of health-promoting behaviors. "Perceived barriers to health-promoting behaviors" can be imagined or real. They may consist of perceptions concerning the unavailability, inconvenience, or difficulty of a particular health-promoting option.

The modifying factors of the Health Promotion Model indirectly influence patterns of health behavior. These factors exert their influence through the cognitive-perceptual mechanisms that directly affect behavior. The modifying factors are demographic characteristics, biological characteristics, interpersonal influences, situational factors, and behavioral factors.

Demographic characteristics such as age, gender, ethnic background, education, and income affect patterns of health-promoting behaviors indirectly through their impact on cognitive-perceptual mechanisms. In the Health Promotion Model, biological characteristics might include percentage of body fat and total body weight. Interpersonal influences on health-promoting behaviors include expectations of significant others, family patterns of health care, and interactions with health professionals. Situational factors include health-promoting options that are available and ease of access to health-promoting alternatives. "The availability of a range of behavioral options increases the opportunity to make responsible choices" (Pender, 1987, p. 68). For example, individuals may want to engage in health-promoting behaviors, but environmental constraints may prevent access to healthful options. Behavioral factors include previously acquired knowledge and skills (cognitive and psychomotor). These skills facilitate the implementation of complex health-promoting behaviors. Previous experience with health-promoting actions increases the ability of individuals to carry out various behaviors to promote well-being.

Cues to action are the variables that affect the likelihood of the individual taking health-promoting action. Cues to action come from either an internal or an external (environmental) origin. Internal cues include personal awareness of the potential for growth or increased feelings of well-being from beginning health promotion efforts. External cues for health promotion include the mass media and conversations with others. The intensity of the cues needed to trigger action will depend on the level of readiness, of the individual or group, to engage in health-promoting behaviors.

Health-Promoting Model for Lower Socioeconomic Populations

The third model presented in the conceptual framework is a researcher-developed model for lower socioeconomic populations. This model is based on Pender's (1987) health promotion model and Smith's (1981) models of health discussed earlier in this section. The Health-Promoting Model for Lower Socioeconomic Populations (Figure 2) consists of the following factors: demographic characteristics, interpersonal influences, situational factors, importance of health, perceived control of health, perceived health status, and definition of health. It was proposed that the first three factors have both a

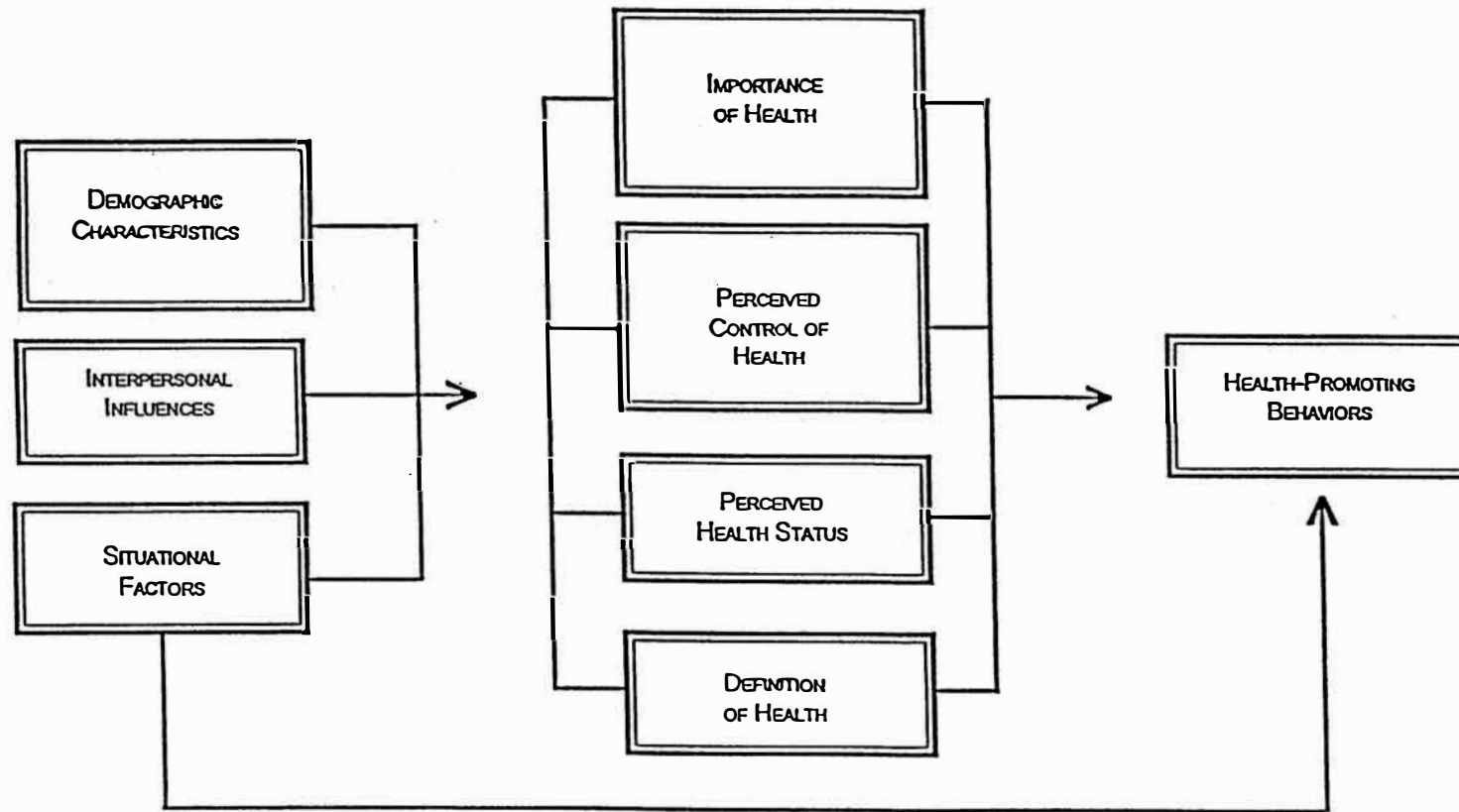


Figure 2. Health-promoting model for lower socioeconomic populations.

direct and indirect effect on health-promoting behaviors and the other four factors have a direct influence on health-promoting behaviors. These factors will be explained in more detail.

Demographic characteristics consists of age, gender, education, ethnic background, and marital status. Interpersonal influences consists of those people who influence individuals' actions toward health-promoting behaviors. These factors could be family, friends, nurses, doctors, or people on TV and radio. Situational factors would include access and availability of health care, available financial resources, and an opportunity to make responsible choices. In this study, one situational factor, an individual's ownership of transportation, was examined. Having a means of transportation would increase access to available health care. Importance of health, perceived control of health, and perceived health status are concerned with an individual's beliefs about his or her own health. An individual's definition of health may influence the extent to which he or she engages in health-promoting behavior. As presented by Smith (1981), health is defined as clinical health, role performance/functional health, adaptive health, and eudaimonistic health. Health-promoting behaviors are those behaviors identified

by Pender (1987): exercise, nutrition, interpersonal support, stress management, health responsibility, and self-actualization.

The factors that are included in Pender's Health Promotion Model that are not included in the Health-Promoting Model for Lower Socioeconomic Populations are: perceived self-efficacy, perceived benefits and barriers to health-promoting behaviors, biologic characteristics, behavioral factors, and cues to action. These factors have a considerable overlap with the factors included in the Health-Promoting Model for Lower Socioeconomic Populations. In the Health-Promoting Model for Lower Socioeconomic Populations, the factor of perceived control of health includes Pender's definition of perceived self-efficacy. The factor of situational factors in the researcher-developed model includes Pender's perceived benefits and barriers to health-promoting behaviors. Demographic characteristics in the Health-Promoting Model for Lower Socioeconomic Populations includes biologic characteristics. The factors of interpersonal influences and situational factors also include Pender's definition of behavioral factors and cues to action.

The Health-Promoting Model for Lower Socioeconomic Populations was tested in the study using path analysis.

Pender's Health Promotion Model predicts that the modifying factors of demographic characteristics, biologic characteristics, interpersonal influences, situational factors, and behavioral factors have an indirect effect on health-promoting behaviors. The Health-Promoting Model for Lower Socioeconomic Populations predicts that the factors of demographic characteristics, interpersonal influences, and situational factors have both a direct and indirect effect on health-promoting behaviors. This prediction was tested using path analysis.

The Conceptual Framework for the study consists of the Four Models of Health (Smith, 1981), the Health Promotion Model (Pender, 1987), and the researcher developed Health-Promoting Model for Lower Socioeconomic Populations. As illustrated throughout this framework, these three models are congruent in their definitions of health and health-promoting behaviors.

Assumptions

The following assumptions were made for this study:

1. Health is defined in many different ways.
2. Many variables, including socioeconomic status, affect an individual's health.
3. Health behavior practices vary among individuals.

4. Illness prevention behaviors, health-protecting behaviors, and health-promoting behaviors are separate concepts.

5. Interpersonal influences, situational factors, importance of health, perceived control of health, perceived health status, definitions of health and health-promoting behaviors can be adequately measured through the instruments that were used in this study.

Research Questions

The following are the research questions that were examined in this study.

1. What are the direct and indirect influences of the following factors on health-promoting behaviors in a LSE population?

(a) Demographic characteristics:

- (1) age
- (2) gender
- (3) education
- (4) ethnic background
- (5) marital status

(b) Interpersonal influences

(c) Situational factors (transportation)

(d) Importance of health

(e) Perceived control of health

(f) Perceived health status

(g) Definition of health

2. What is the reliability of the Laffrey Health Conception Scale (LHCS) with a LSE population?

3. What is the reliability of the Health-Promoting Lifestyle Profile (HPLP) with a LSE population?

4. What is the validity of the LHCS with a LSE population?

5. What is the validity of the HPLP with a LSE population?

6. What are the pairwise correlations between the total scores and the subscale scores of the Laffrey Health Conception Scale (clinical, role performance/functional, adaptive, and eudaimonistic) and subscale scores of the Health-Promoting Lifestyle Profile (exercise, nutrition, interpersonal support, stress management, health responsibility, and self-actualization) for a LSE population?

Definition of Terms

The operational definitions for the study are as follows:

1. Demographic characteristics--age, gender, education, ethnic background, and marital status. Items

1, 2, 3, 4, and 5 on the Demographic instrument measured these variables (Appendix A).

2. Interpersonal influences--the person who has the most effect on the subjects' ability to stay healthy. Item 6 on the Demographic instrument measured this variable (Appendix A).

3. Situational factors--the subjects' ownership of transportation. Item 7 on the Demographic instrument measured this variable (Appendix A).

4. Importance of Health--a Likert-format statement about the value that the subjects placed on health. Item 8 on the Demographic instrument measured this variable (Appendix A).

5. Perceived Control of Health--a Likert-format statement about the subjects' perceptions of their ability to control their own health. Item 9 on the Demographic instrument measured this variable (Appendix A).

6. Perceived Health Status--a Likert-format statement about the subjects' perceptions of how healthy they were. Item 10 on the Demographic instrument measured this variable (Appendix A).

7. Definition of Health--clinical health, role performance/functional health, adaptive health, and

eudaimonistic health, as addressed by the subscales of the Laffrey Health Conception Scale (LHCS) (Appendix B).

8. Health-Promoting Behaviors--exercise, nutrition, interpersonal support, stress management, health responsibility, and self-actualization, as addressed by the subscales of the Health-Promoting Lifestyle Profile (HPLP) (Appendix C).

9. Lower Socioeconomic Population--those subjects who are 18 years of age, can read and write English at a seventh grade level, and whose health care needs are served by a nurse-managed health center located in a low income apartment complex in the southern region of the United States.

Limitations

The following limitations were identified for the study:

1. The use of a nonprobability, convenience sample and the use of one geographic area limits generalizability of the findings.

2. Because the subjects were obtained at a Health Center, the sample may have been biased toward healthy practices and, therefore, not representative of the population.

3. All subjects need to have a seventh grade reading level to understand and complete the instruments. It is possible that those subjects who reported having a seventh grade educational level may not have been able to read at that level.

4. The instruments that were used in the study are self-report measures; therefore, responses are limited by the extent to which the subjects are willing to divulge the requested information (Nunnally, 1978).

Delimitations

The delimitations for the study were:

1. Only subjects who could read, write, and understand English were eligible to participate in the study.

2. Only subjects who reported at least a seventh grade educational level were eligible to participate in the study.

3. Only subjects who were eligible to receive services at the Health Center were eligible to participate in the study.

Summary

Health promotion has become an important focus of the nursing profession. However, little information is

available about the factors that influence health-promoting behaviors in a LSE population. Few studies or instruments have been designed to examine health-promoting factors with a LSE population. The problem of this study was to examine the direct and indirect influences of demographic characteristics, interpersonal influences, situational factors, importance of health, perceived control of health, perceived health status, and definition of health on health-promoting behaviors in a LSE population. The conceptual framework that guided the research study consisted of Smith's (1981) Four Models of Health, Pender's (1987) Health Promotion Model, and the researcher-developed Health-Promoting Model for Lower Socioeconomic Populations. This study tested the Health-Promoting Model for Lower Socioeconomic Populations through the use of correlational procedures and path analysis. Additionally, reliability and validity of the LHCS and the HPLP were estimated for the study population. Finally, the study examined the relationship between definitions of health and health-promoting behaviors in a LSE population.

CHAPTER II

REVIEW OF LITERATURE

This chapter examines the research literature concerning definitions of health and health-promoting behaviors. Research studies that have examined definitions of health or used the Laffrey Health Conception Scale (LHCS) or the Health-Promoting Lifestyle Profile (HPLP) will be presented. Information will also be presented concerning the research that has been conducted with lower socioeconomic (LSE) populations. Finally, this chapter will examine the role of the nurse in health promotion.

Definitions of Health

The word "health" did not appear in writing until approximately 1000 A.D. (Pender, 1987). Health is derived from the Old English word "hoelth," which meant being safe or sound and whole of body (Pender, 1987). Florence Nightingale defined health as an additive process and the result of environmental, physical, and psychological factors (Reed & Zurakowski, 1983). The environmental factors that affected health included "dirt, drink, diet,

damp, draughts, and drains" (Reed & Zurakowski, 1983, p. 15). Nightingale viewed health not only as the opposite of disease, but as being "able to use well every power we have to use" (Reed & Zurakowski, 1983, p. 15). She also contended that disease is a reparative process that is the body's attempt to correct some problem and provide one an opportunity to gain spiritual perspective (Reed & Zurakowski, 1983).

In the first half of the 20th century, health and illness were viewed as extremes on a continuum, where the absence of one indicated the presence of the other (Pender, 1987). According to Pender (1987), this definition is still used by many today. She pointed out that it was not until after World War II that the mental status of individuals began to be recognized as another important aspect of health.

In 1959, Dunn differentiated between health and wellness. He defined high-level wellness as "an integrated method of functioning which is oriented toward maximizing the potential of which the individual is capable. It requires that the individual maintain a continuum of balance and purposeful direction within the environment where he is functioning" (Dunn, cited in Pender, 1987, p. 21). In 1974, the World Health

Organization (WHO) defined health emphasizing the positive qualities of health. This definition stated that "Health is a state of complete physical, mental, and social well-being and not merely the absence of disease and infirmity" (Pender, 1987, p. 17). This definition of health reflects a concern for the individual as a total person rather than the sum of parts, places health in the context of the environment, and equates health with productive and creative living.

Today, there is still no universally accepted definition of health. Definitions of health have been categorized in many different ways. Wylie (1970) described two categories of health: asymptotic, or open-ended, and elastic. An asymptotic definition of health is an ideal on the horizon that can be approached but never reached. Two examples of the asymptotic definition of health are those of the World Health Organization and Dunn (1959). The elastic category of health relates "to an ability to resist threats of disease and pictures a positive interaction between the person or community and the environment" (p. 101). Christiansen (1981) listed two examples of the elastic definition of health, that of Murray and Zentner (1979) and Salk (1978). Murray and Zentner (1979) defined health as "a purposeful,

adaptive response, physically, mentally, emotionally and socially, to internal and external stimuli in order to maintain stability and comfort" (p. 6). Salk (1978) defined health as a "state in which the potential of the individual is developing in a balanced way, that he may cope with the vicissitudes of life and function fully in the service of life in evolution" (p. 14).

Mallick (1979) added the functional definition of health. This definition "is relative to the ability to function despite the presence of disease" (p. 30). Christiansen (1981) listed Talcott Parsons' definition of health as an example of functional health. Parsons (1979) defined health "as the state of optimum capacity for the effective performance of valued tasks" (p. 123). Parsons suggested that there is a "health role" that has as an implied purpose the maintenance of the individual's health.

Dolfman's (1973) conceptualization of health would also fit into the functional definition of health category. Dolfman proposed that there were three concepts of health: functioning, adapting, and normality. Dolfman defined health as a state that enables individuals to function adequately and to adapt adequately to their environment. Dolfman suggested that the meaning and

implications of the word health would change as individuals and social values change.

Bender (1985) listed two other categories of definitions of health: health as being either broad or narrow in scope and health as being either on one continuum with illness or on a separate continuum. One example of a broad, all-encompassing definition of health is the World Health Organization's definition stated previously in this section. An example of a narrow, conservative view of health is the medical or clinical definition of health (Bender, 1985). This definition of health is illness-oriented and refers to the absence of disease. Physicians traditionally utilize this definition of health, which facilitates diagnosing a malfunction of the system (Bender, 1985).

Bruhn, Cordova, Williams, and Suentes (1977) viewed health on a continuum, with illness at one end of the scale and wellness at the other end of the scale. The continuum allows for varying levels of health and illness.

Twaddle and Hessler (1977) described health as being on a separate continuum from that of illness and death. They suggested that an individual may manifest degrees of health in the presence of illness.

Another example of a non-continuum definition of health is contained in Schlenger's (1976) proposed framework. This framework is based upon a living systems conceptualization of health, with a positive feedback loop and a negative feedback loop. The negative feedback process seeks to reduce deviation in order to restore balance. The positive feedback loop seeks self-actualization and the growth component of health. Schlenger stated that health integrates both the positive and negative feedback processes. These processes operate independently of each other and allow for movement within both dimensions.

Pender (1987) listed categories of definitions of health as stabilizing, actualizing, or both stabilizing and actualizing in nature. Hudak (1988) summarized Pender's (1987) stability-based definitions of health as: "the ability to adhere to the normative values for physiological functioning; to adapt to the ever-changing internal and external environment; and to perform the roles and tasks for which one has been socialized" (p. 56). Pender (1987) discussed Parsons' (1979) definition of health. She also referred to three models that included a stability definition of health: Johnson's Behavioral System Model (cited in Loveland-Cherry &

Wilkerson, 1983), Betty Neuman's (1982) Systems Model, and Roy's (1984) Adaptation Model.

Pender (1987) stated that Dunn was the leading proponent of definitions of health that emphasize actualization. Dunn's (1959) definition of health emphasizes the realization of human potential through purposeful activity. Pender (1987) also listed three nurse-theorists' work that contain definitions of health reflective of the actualization category: Orem's (1985) Self-Care Model, Margaret Newman's (cited in Engle, 1983) Model of Health, and Parse's (1981) Man-Living-Health theory of nursing.

Finally, Pender (1987) listed three authors whose definitions of health incorporate both the themes of stability and actualization: Oelbaum (1974), King (1981), and Smith (1983). Oelbaum (1974) identified 26 functions or behaviors of adults in optimum health. The actualization behaviors reflect self-direction and initiative, while the stabilization behaviors represent reactive adjustment and adaptation responses (Pender, 1987). King (1981) defined health as: "Dynamic life experiences of a human being which implies continuous adjustment to stressors in the internal and external environment through optimum use of one's resources to

achieve maximum potential for daily living" (p. 5). Smith (1983) suggested four models of health: clinical model, role-performance model, adaptive model, and eudaimonistic model. These models of health have been discussed in great detail in the Conceptual Framework section of Chapter I.

Pender's (1987) definition of health also fits under the conceptualization of health as being both stabilizing and actualizing. "Health is the actualization of inherent and acquired human potential through goal directed behavior, competent self-care, and satisfying relationships with others while adjustments are made as needed to maintain structural integrity and harmony with the environment" (Pender, 1987, p. 27).

As shown with the previous literature review, definitions of health are both unidimensional and multidimensional in nature. This study will utilize Smith's (1983) and Pender's (1987) definitions of health. These definitions are broad, open-ended, functional, and reflect both stability and actualization.

Health Promotion

Health promotion has traditionally been a high priority goal for nursing (Brubaker, 1983). However, the terms health promotion, health protection, and health

behavior are not always clearly defined in the literature and frequently overlap (Bagwell, 1988). After reviewing health promotion literature, Brubaker (1983) noted that health promotion is often used interchangeably with disease prevention and health maintenance. This author contended that "disease prevention begins with a threat to health and protects people from harmful consequences, whereas health promotion begins with people who are basically healthy and assists them in developing lifestyles that maintain and enhance their state of well-being" (p. 5). Health promotion is "health care directed toward high-level wellness through processes that encourage alteration of personal habits or the environment in which people live" (Brubaker, 1983, p. 12). Brubaker stated that health promotion occurs after health stability is present and assumes that disease prevention and health maintenance are prerequisites or are by-products of health promotion. This author further stated that health promotion is directed toward self-development, growth, and a high-level wellness.

Harris and Guten (1979) introduced the phrase "health-protective behavior" into the literature in 1979. They defined health-protective behavior as "any behavior performed by a person, regardless of his or her perceived

or actual health status, in order to protect, promote or maintain his or her health, whether or not such behavior is objectively effective toward that end" (p. 18). This term and definition, however, includes both health-protecting and health-promoting behaviors (Pender, 1987).

In 1979, the United States Surgeon-General differentiated between disease prevention and health promotion (U. S. Department of Health, Education, and Welfare, 1979). Disease prevention was defined as beginning "with a threat to health--a disease or environmental hazard--and seeks to protect as many people as possible from the harmful consequences of that threat" (p. 119). Prevention services included those that "can be delivered to people by health providers . and measures which can be used by governmental and other agencies, as well as by industry, to protect people from harm" (p. 81).

The Surgeon-General defined health promotion as beginning "with people who are basically healthy and seeks the development of community and individual measures which can help them to develop lifestyles that can maintain and enhance the state of well-being" (p. 119). Health promotion consists of "activities which individuals and communities can use to promote healthy lifestyles"

(p. 81). The difference between these definitions is that prevention activities are actions that government and industry can do to and for people, while health promotion activities are actions that people and communities can do for themselves (Rosenstock, 1987).

In 1980, Shortridge and Lee suggested that there was a difference between preventive care, maintenance care, and health promotion. They defined preventive care as consisting of education about actions to prevent illness. Maintenance care includes measures to preserve the current health status and is directed toward wellness. Health promotion "is concerned with helping individuals to expand their capabilities in everyday activities and experiences and to live a fuller and more satisfying life" (p. 25). Health promotion is directed toward high-level wellness.

In contrast, Johnson-Saylor (1980) included health maintenance and disease prevention behaviors as well as health-promoting behaviors in her definition of health promotion. Johnson-Saylor listed the following three goals as health promotion goals: (a) health maintenance geared toward prevention of disease, (b) early detection, and (c) guidance toward wholeness, balance, and optimum functioning.

Beland and Passos (1981) noted the failure of the literature to differentiate between health promotion and disease prevention. They suggested that health promotion concerns those conditions that contribute to healthful living, while disease prevention is more directly focused on preventing specific diseases (Beland & Passos, 1981; Brubaker, 1983).

In examining the association between health care behavior and attitudes, Yoder, Jones, and Jones (1985) noted the following differences in disease prevention behavior and health promotion behavior. These authors defined disease prevention behavior as "those behaviors undertaken in the absence of symptoms in order to stay healthy that require the assistance of a health professional" (p. 25). This behavior would include immunizations, hypertension screening, and medical checkups. Health promotion was defined as "those behaviors an individual does for himself in the absence of symptoms in order to stay healthy that do not require the assistance of a health professional" (p. 25). Examples of this behavior would be exercising regularly, eating nutritious meals, and developing satisfying interpersonal relationships.

Duncan (1986) also viewed health maintenance, health promotion, and health restoration as separate concepts. According to this author, health maintenance is aimed at healthy individuals but focuses on prevention. Health promotion is also aimed at healthy individuals but focuses on high-level wellness. Health restoration, however, involves those activities aimed at ill individuals seeking a more positive state of health.

Nemcek (1986) surveyed the nursing literature published between 1970 and 1986 for studies that examined health promotion in well adults. Only 25 studies were found that had a healthy, non-disease focus. Of the 25 studies surveyed, 20 of them were conducted between the years 1981 and 1985. Studies before 1980 were more focused on disease prevention, while after 1980 the study of health promotion was expanded to include enhancement of well-being and was increasingly holistic. From the survey results, Nemcek concluded that "Health promotion of well adults is a research topic of concern to nurses of the 80s. It has been more extensively researched between 1983 and 1985 than any time prior" (p. 474).

In a report of the proceedings of a Wingspread Conference, Pattishall (1987) stated that even though

health-protecting behavior has considerable overlap with health-promoting behavior, health-protecting behavior is quite different from health-promoting behavior. Pattishall defined health-protecting behavior as "more of a defensive phenomenon and health-promoting behavior as an effort to establish individual, family, community, and societal efforts to support behavior conducive to health" (p. 31). Laffrey, Loveland-Cherry, and Winkler (1986) asserted that disease is only one factor that affects health because "the scope of health is broader than the scope of disease" (p. 99). A health-promoting behavior model should encompass growth-producing motivations that would include disease prevention (Laffrey et al., 1986).

Laffrey (1985b) stated that health promotion is "any action taken for the purpose of achieving a higher level of health and well being, however these are defined by the individual" (p. 37). Laffrey concluded that it is first necessary to identify what conceptions [definitions] of health are operating at any given time, if health care providers are going to help clients meet their specific health promotion needs.

Pender (1987) also differentiated between health-protecting behavior and health-promoting behavior. "The primary goal of health protection is the removal or

avoidance of encumbrances throughout the life cycle that may prevent the emergence of optimum health" (p. 38). Pender went on to explain that encumbrances go beyond illness and could include disturbed interpersonal relationships, stress, or social disruption. Health-protecting behavior emphasizes prevention--guarding or defending an individual or group against specific illness or injury (Pender, 1987).

Pender (1987) defined health promotion as activities directed toward increasing the level of well-being and the health potential of individuals, as well as families, communities, and society. Pender stated that health-promoting behaviors are almost always continuing activities that must be an integral part of an individual's lifestyle. Health-promoting behavior maximizes positive arousal such as increased self-awareness, self-satisfaction, enjoyment, and pleasure (Pender, 1987).

Using Pender's (1987) definitions of health-protective behavior and health-promoting behavior, Duffy (1988b) distinguished between health promotion research and disease prevention research. Duffy defined health promotion research as those studies that address "the general health of the population and development of that

population to its fullest potential" (p. 110). Duffy defined disease prevention research as those studies that investigate "factors specific to a particular illness, disability or condition and the interventions necessary to prevent the problem" (p. 110).

In an exploratory, qualitative study that investigated the patterns of health behaviors of 85 adults, Laffrey (1990) defined three patterns of health behaviors: illness prevention, health maintenance, and health promotion. Illness prevention was defined as engaging in a behavior primarily to prevent illness or disease from occurring or, if the condition was already present, to prevent it from getting worse. Health maintenance was defined as behavior performed primarily to maintain current stable health for the individual. Health promotion was defined as behavior performed primarily to achieve a greater level of health or well-being. From the results of the study, Laffrey found that health behaviors varied little among those individuals who perceived themselves to be in good, fair, or poor health.

As demonstrated with this literature review, many authors support the belief that health-protecting behaviors are different from health-promoting behaviors. The current health promotion study also assumed that there

is a difference between health-protecting and health-promoting behaviors. The current study utilized Pender's (1987) and Laffrey's (1985b) definitions of health-promoting behaviors in examining the behaviors of a LSE population.

Health Promotion Research Studies

This section presents research studies that have examined definitions of health, used the Laffrey Health Conception Scale (LHCS), and/or used the Health-Promoting Lifestyle Profile (HPLP). Each of these topics will be discussed in a separate section.

Studies Concerning Definitions of Health

Dr. Shirley Laffrey examined the relationship between clients' definitions of health and their health behavior choices in several studies. Laffrey (1985b, 1986b) measured perceived health status, health conception, and health behavior choice between overweight and normal weight individuals in a midwestern suburban community. Laffrey found there was no difference between the two groups on the above mentioned variables. People in the overweight group did not consider themselves less healthy than the normal weight people. "How one defines health is more closely related to one's reasons for engaging in

health behavior, than to how healthy or unhealthy one believes oneself to be" (Laffrey, 1985b, p. 36).

Laffrey (1985a) also examined health behavior choices as related to self-actualization and health conception among 95 residents in three midwestern suburbs. Laffrey used health conception as an indicator of the characteristic of valuing, health behavior choice as an indicator of the characteristic of choosing, and self-actualization as an indicator of the level of development of the individual. Laffrey found that self-actualization was not positively associated with health conception or with health behavior choice. Individuals, however, who had a more complex conception of health selected more health-promoting behavior choices than did individuals with a less complex conception of health (Laffrey, 1985a). Laffrey concluded that the results of this study indicated further study of health conception and health behavior choice with other populations was needed.

Laffrey and Crabtree (1988) compared 29 individuals with cardiovascular disease with 29 healthy individuals on the variables of health conceptions, perceived health status, and health behaviors. This study found similarities in health conceptions and health behaviors

between the two groups. However, while the cardiovascular clients perceived themselves to be less healthy, overall, than the healthy group, the cardiovascular clients saw themselves to be less healthy on the clinical dimension of health only. The cardiovascular group saw themselves equally healthy on the functional, adaptive, and eudaimonistic (self-actualization) dimensions.

Using 387 subjects, Christiansen (1981) compared individuals who engaged regularly in health-promoting behaviors and individuals who infrequently engaged in health-promoting behaviors. The goal of the study was to obtain knowledge of possible determinants of health-promoting behavior. Christiansen used three definitions of health in her study: a complete well-being definition, a functional definition, and an absence of disease definition. The majority of subjects who ascribed to the complete well-being definition had some education beyond high school, were between 35 and 44 years of age, believed they were more healthy than average people their age and sex, and were internally controlled. Those subjects choosing the complete well-being definition of health had the highest education. Those subjects choosing the functional, more narrow definition of health had the lowest mean education. However, Christiansen found that

definition of health was not a significant predictor of health behavior.

Fontes (1983) used Smith's (1981) models of health and Maslow's (1970) definition of self-actualization as part of the conceptual framework to study cognitive style, interpersonal needs, and eudaimonistic health or self-actualization. The sample consisted of 163 upper middle-class suburban subjects between the ages of 25 and 60 years, who had some college and/or graduate education, and who reported a high socioeconomic status. Health in the eudaimonistic or self-actualization model was the major focus of the study. The Personality Orientation Inventory (POI), which was regarded by Maslow as an instrument to measure self-actualization, was used in the study along with the Fundamental Interpersonal Relations Orientation-Behavior (FIRO-B), which measures interpersonal needs, and the Group Embedded Figures Test (GEFT), which measures cognitive style. Using the chi-square test for goodness of fit for analyses of the data, Fontes' study revealed that interpersonal needs and cognitive style were not correlates of eudaimonistic health. Fontes concluded that the study failed to support the idea promoted in the literature that moderation and

balance, as measured by the above characteristics, were correlates of health.

Bender (1985) investigated the relationship between an individual's definition of health and participation in health-protecting or health-promoting behaviors. Bender administered a demographic questionnaire, the Laffrey Health Conception Scale, and the Health Protection/Promotion Behavior Index to a convenience sample of 54 community college students, age 20 to 44 years. Using the Mann-Whitney U for analysis of the data, it was revealed that there was no difference in health-promoting behaviors between individuals who defined health as stabilizing (illness and performance oriented) and those who defined health as actualizing (adaptive and growth oriented). It was also found that there was no difference in health-protecting behaviors between those individuals who subscribe to an actualizing definition of health and those who subscribe to a stabilizing definition of health. In other words, an individual's definition of health did not influence an individual's performance of health-protecting or health-promoting behaviors.

To elicit health images, Woods et al. (1988) asked over 500 women between the ages of 18 and 45 "What does being healthy mean to you?" Woods et al. found the same

four categories of health as defined by Smith (1981) and Laffrey (1985a). Older women reported more role performance and adaptive health images, while younger women and those with more formal education and income reported a greater number of eudaimonistic images. Woods et al. also reported that those women who reported eudaimonistic images reported the lowest frequency of clinical and role performance images.

Nelson-Marten (1988) used the LHCS, the Ware Health Perception Questionnaire, and the Nowotny Hope Scale to examine relationships among an individual's definition of health, the individual's perception of his or her own health status, and the individual's level of hope. The sample for the study was composed of 40 cancer patients and 40 matched healthy individuals between the ages of 25 and 55 years. Nelson-Marten did not find a significant difference in how the cancer group and the healthy group defined health. There were, however, significant relationships between definition of health and perception of hope, and between perception of health state and perception of hope.

Health-Promoting Lifestyle Profile Studies

Kashka (1987) explored the relationship between health promotion activities and meaning in life of 72 adult women--registered nurses and university faculty, staff, and administrators. Using the HPLP and the Life Attitude Profile (LAP) instruments, Kashka found that a significant relationship existed between the measures obtained on the two instruments ($r = .3669$), but accounted for only 14% of the variance. The Exercise and Nutrition subscales were related to an even lesser degree than the other HPLP subscales. However, using the Pearson product moment correlation, the correlation between the HPLP subscale of Self-Actualization and the LAP subscale of Life Purpose was .7915, accounting for a shared variance of 63%. When examining demographic variables, Kashka found that: the LAP total score and education were predictive of the HPLP total score, age was predictive of the HPLP subscale Health Responsibility, and the LAP subscale Life Control was predicted by income and marital status. Kashka recommended that her study be replicated with LSE and minority populations.

Using Pearson's product moment correlation and Spearman rank order correlation, Pascucci (1987) examined relationships among health values, incentives, social

support, and health promotion behaviors. Through structured interviews, 30 well-elderly subjects completed the HPLP and four other instruments. Pascucci found a significant relationship between the health value of mature love and health promotion behaviors ($r = .36$, $p < .05$). Pascucci also found a significant relationship between true friendship and health promotion behaviors ($r = .40$, $p < .03$). Again, a significant relationship was found between social support and health promotion behaviors ($r = .64$, $p < .001$). There were, however, no significant relationships between gender, age, race, marital status, living arrangements, education, and health promotion behaviors.

Duffy (1988a) analyzed health locus of control, health status, and self-esteem for their impact on the health-promoting behaviors of 262 women between the ages of 35 and 65 years. High perceived health status, a post-high school educational level, high self-esteem, internal and negative chance health locus of control, and health worry/concern explained 25% of the variance in likelihood to engage in health-promoting behavior.

Canonical correlational analysis was used to examine the relationships between the predictor variables of age, internal health locus of control, chance health locus of

control, self-esteem, health worry/concern, current health status, past health status, and health outlook (Set 1), and the six subscale scores of the HPLP (Set 2). Two significant canonical variates explained 72.8% of the variance in health-promoting behavior. The first canonical variate (36.3% of the variance) was strongly influenced by self-esteem, health outlook, current health, and internal health locus of control. Internal health locus of control was inversely related to the self-actualization, exercise, and interpersonal support health promotion scores. The second canonical variate (36.5% of the variance) was influenced by health worry/concern and age, which were positively related to the health responsibility, nutrition, and stress management health promotion scores. Chance health locus of control and past health status were inversely related to the health responsibility, nutrition, and stress management health promotion scores. In other words, subjects who scored high on self-esteem and internal health locus of control, low on chance health locus of control, and who reported their current health status as good were those who had high scores on the nutrition, self-actualization, exercise, and interpersonal support subscales. In contrast, the second variate indicated that subjects who

were older, reported poor past health status, had high health worry/concern scores, and had low chance health locus of control scores were the ones who had high scores on the nutrition, health responsibility, and stress management health promotion subscales. The study, however, did not support Pender's (1987) belief that demographic variables (age, race, income level of the household, education, marital status, employment, and number of persons in the household) have an impact on health-promoting behaviors. Duffy (1988a) concluded that the study results did partially support the relationships posited in Pender's (1987) Health Promotion Model.

Davidson (1988) conducted a study to determine the predictive value of a health embodiment theorem, by analyzing the relationship between health-promoting behaviors and the exercise of self-care agency. Using the HPLP with 270 elderly Mennonite subjects, Davidson found that a significant relationship existed between health-promoting behavior and the exercise of self-care agency. Statistically significant relationships ($p < .01$) were found between exercise of self-care agency and each of the HPLP subscales of self-actualization, health responsibility, exercise, nutrition, interpersonal support, and stress management. Significant relationships

($p < .01$) were also found between self-care agency and the demographic variables of occupation and perceived health status. The variables of exercise, self-actualization, nutrition, and marital status were found to be most predictive (69% explained variance) of the ability to perform self-care.

James (1988) attempted to validate the HPLP with a sample of 509 adolescents, ranging in age from 15 to 19 years. Factor analyses, item analyses, content analyses, correlation procedures, and Cronbach's alpha coefficients were used in the study. James used the principal factor analysis with oblique (PROMAX) rotation to confirm the six factors of the HPLP with an adolescent population. Although some factors loaded differently than in the Walker, Sechrist, and Pender (1987) study, six factors were reproduced with the adolescent population. The Cronbach's alpha coefficient calculated for the total instrument was .93. However, no clinical significance was found between the six confirmed factors and selected health screening items, demographic data (e.g., age, mother's and father's occupations, and educational level), and data concerning the adolescent's general activities.

Fehir (1988) used the HPLP to determine the extent to which perceived health status, self-efficacy, motivation, and selected demographic variables were related to health-promoting behavior in 167 men. Frequencies, correlations, stepwise multiple regression, and canonical correlations were used to analyze the data. Forty-two percent of the variance in the health-promoting behaviors was explained by five significant contributors to the stepwise equation. "These were the independent variables of perceived competency in health matters (accounting for 29% of the variance), social self-efficacy (8%), being married (4%), perceived health status (1%), and internal cue responsiveness (2%)" (Fehir, 1988, p. 90). Fehir also found that self-efficacy, and motivation were all directly and positively related to health-promoting behavior. Socioeconomic indicators such as household annual income and education were not related to perceived health status, self-efficacy, or motivation, but they were indirectly and positively related to health-promoting behavior.

Walker, Volkan, Sechrist, and Pender (1988) used the HPLP to compare health-promoting behaviors of older adults to those of young and middle-aged adults and to examine the relationship of age and other sociodemographic characteristics to lifestyle throughout adulthood. The

452 subjects from a midwestern state ranged in age from 18 to 88 years, with an educational level that ranged from eighth grade to a graduate or professional degree. Family income of the subjects ranged from under \$5,000 to over \$50,000, with the median category being \$25,000 to \$35,000.

Walker et al. used a series of one-way analyses of variance (ANOVAs) to determine differences in scores on the HPLP and its six subscales among young adults aged 18 to 34 years ($n = 167$), middle-aged adults aged 35 to 54 years ($n = 188$), and older adults aged 55 to 88 years ($n = 97$). The study results revealed that older adults had higher scores in overall health-promoting lifestyle and in the subscales of health responsibility, nutrition, and stress management than either the young or the middle-aged adults.

Multiple correlation analyses revealed that sociodemographic variables accounted for only 13.4% of the variance in lifestyle and for 5.2% to 18.6% of the variance for the six subscales of the HPLP among the entire sample of adults. Older age was found to contribute significantly to the explanation of variance in an overall health-promoting lifestyle, as well as in the following four dimensions: health responsibility,

nutrition, self-actualization, and stress management. Being married (marital status) and not being employed (employment status) were both associated with a higher frequency of health-promoting nutrition behaviors. Education and income both contributed to the explanation of variance in overall health-promoting lifestyles and in the dimension of self-actualization. Higher income was also associated with health responsibility and exercise, while higher education was associated with nutrition, interpersonal support, and stress management.

Speake, Cowart, and Pellet (1989) also studied the well elderly, using the HPLP, the Multidimensional Health Locus of Control Scale, and a perceived health status instrument. These researchers examined the relationship between aspects of a healthy lifestyle and selected demographic variables, perceived health status, and health locus of control. The majority of the 297 subjects of north Florida were between the ages of 55 and 93 and were unmarried, white females with more than a high school education. While 28.8% of the subjects reported incomes of less than \$5,000, approximately half of the subjects reported incomes of more than \$15,000 a year. Pearson product-moment correlations and stepwise multiple regression procedures revealed that health locus of

control and perceived health status were significant predictors of healthy lifestyles. Internal health locus of control and perceived health status scores were positively related to scores on the exercise, nutrition, stress management, health responsibility, and self actualization subscales. Speake et al. concluded that the stronger the external locus of control orientation, the fewer health behaviors, as measured by the HPLP, that were performed.

Of the demographic variables, education was positively related to scores on the nutrition, interpersonal support, health responsibility, and self actualization subscales and with lower stress management scores on the HPLP. Income, gender, and marital status were not significantly associated with any of the HPLP subscales. With demographic variables controlled, perceived health and locus of control accounted for 24% of the variance in the HPLP composite scores and 10% to 22% of the explained variance in the HPLP subscale scores. Speake et al. concluded that the findings of the study supported the relationship between cognitive perceptual factors and lifestyle practices as presented in Pender's (1987) model. The demographic variables, posited as modifying factors in Pender's model, were found to be

associated with cognitive-perceptual factors but were not predictive of lifestyle practices as measured by the HPLP subscales.

Weitzel (1989) tested the health promotion model to determine whether selected components of the model related to health-promoting behaviors. The HPLP was one of the instruments completed by 179 nonprofessional employees in the physical plant division of a large state university campus. Pearson product moment correlations and stepwise and hierarchical multiple regression techniques were used to analyze the data. Weitzel found that importance of health, perceived health locus of control, health status, and self-efficacy were predictive of health-promoting behaviors. Health status and self-efficacy were the most powerful predictors. Weitzel stated that this finding indicated "that the better a person believes his health to be, the more likely he will act in ways to maintain it; and that believing in one's ability to accomplish a behavior acts as a motivator to perform the behavior" (Weitzel, 1989, p. 102). Even though the greatest variance explained was only 28%, Weitzel concluded that the results of the study suggested that most of the variables examined contributed to predicting a health-promotive lifestyle and specific health-promoting

behaviors as proposed in the health promotion model. Weitzel did, however, acknowledge that there must also be other variables not accounted for in the health promotion model for this population of blue-collar workers.

Duffy (1989) examined the extent to which health locus of control, self-esteem, and health-promotion activities (using the HPLP) explained the health status of 420 employed women of a state agency and an educational institution. Hierarchical multiple regression analysis was performed on the total health status score. The results of the study illustrated several significant findings. The study supported the finding that socioeconomic level is positively related to health status. The presence of a diagnosed health problem and annual household income made a significant contribution to explaining health status. The health-promotion activities of health responsibility, self-actualization, and exercise also emerged as significant predictors of subjects' health status. The variables of diagnosed health problem, internal and chance health locus of control, income, health responsibility, self-actualization, and exercise explained 33% of the variance of overall health status. Subjects who rated their overall health status as good were characterized by having no diagnosed health problems,

good household incomes, high internal locus of control, low chance locus of control, high self-actualization, high exercise, and low health responsibility. Duffy concluded that the results of the study provided partial support for Pender's (1987) Health Promotion Model.

Rew (1990) conducted an exploratory, correlational survey in a southern state to determine predictors of a health-promoting lifestyle and sexual satisfaction among 41 male subjects. Step-wise multiple regression analysis and Pearson product moment correlations were used to analyze the data collected using the following instruments: Rosenberg's Global Self-Esteem Scale (GSES), the Bem Sex-Role Inventory (BSRI), the Body Cathexis Scale (BCS), the Hudson Index of Sexual Satisfaction (HISS), and the HPLP. The subjects ranged in age from 21 to 63 years, and the majority were married and had some college education. Income was not a measured demographic variable; however, 75.6% of the subjects were managers, administrators, or professionals, and the remaining 24.4% of the subjects were technicians, clerks, or skilled manual laborers. Rew found that among this group of healthy men, significant predictors of health-promoting lifestyle were education, body image, and self-esteem ($p < .0001$). In other words, the higher the level of education

and the more positive the self-esteem and body image of the subjects, the more likely they were to engage in health-promoting behaviors.

Studies Using Both the Laffrey Health
Conception Scale and the Health-
Promoting Lifestyle Profile

Bagwell (1988) used both the LHCS and the HPLP to study male and female, developmentally-categorized, employed adults. Their concepts of health and their lifestyle activities that promote health were examined. The 160 subjects were employed in blue-collar positions at two industrial plants in the southwest region of the United States. Their ages ranged from 26 to 65. The majority of subjects were White, married, earned more than \$25,000, and had either attended some college or had a college degree. Descriptive statistics, the Pearson product moment correlation, two-way analysis of variance (ANOVA), and the Fisher's z transformation for independent r s were used to analyze the data.

Bagwell found that female subjects had a significantly higher mean score than male subjects on the HPLP subscales of health responsibility and interpersonal support. Age was associated with the HPLP subscales of exercise and nutrition. The younger age group (26-44 years) had a higher mean score on exercise than did the

older age group (45-65 years). However, the older age group had a higher mean score than did the younger age group on nutrition.

Bagwell also found that there was a statistically significant interaction between gender and age on the total LHCS and two of its subscales: role performance and adaptive. Older males and younger females tended to believe that being able to perform their assigned roles or being able to adjust efficiently to changing circumstances meant that they were healthy. Data analysis revealed that high scores on the total LHCS were positively related to high scores on the HPLP. Total LHCS also had a significant relationship with the HPLP subscales of self-actualization, health responsibility, interpersonal support, and stress management. The study results revealed that the higher the subjects scored on the LHCS subscales of role, adaptive, and eudaimonistic, the higher they scored on the total HPLP. Subjects who scored high on the clinical health scale of the LHCS tended to score low on the total HPLP score. The study supported Bagwell's theoretical framework, which postulated that the stronger the health conception, the stronger are the health-promoting behaviors.

Hudak (1988) carried out a comparative study of health beliefs and health-promoting behaviors, using 140 normal weight and 115 overweight male Army personnel. Hudak used descriptive statistics, the chi-square test, the independent samples t -test, the Mann-Whitney U test, and a two-group stepwise discriminant function to analyze the data obtained from a Background Information Form, the Health Value Scale, the Multidimensional Health Locus of Control Scale, the LHCS, and the HPLP. Subjects were assigned to a combat unit at a large Army installation located within the southwestern region of the United States. Subjects ranged between the ages of 17 and 43; the majority of subjects were White, married, were high school graduates or had earned a GED (Graduate Equivalency Diploma), were junior enlisted soldiers with an average rank of Corporal, and had served in the Army a mean of 4.5 years.

Hudak found no significant differences between the two groups on how health was defined. Both groups viewed health more within the context of wellness rather than the absence of symptoms of disease. There were no significant differences between the groups in regard to the value of health. Health was chosen as one of the three most important values by over half of the subjects. There was

also no statistically significant differences between the two groups in regard to perception of personal control of health. However, a significantly larger percentage of the normal weight group was categorized as "high internal" than the overweight group. The groups also did not differ in the belief that being overweight is a health hazard. The majority of subjects recognized that there are health risks associated with being overweight.

There was one significant difference between the groups in regard to health-promoting behaviors. The overweight group demonstrated more health-promoting behaviors in terms of health responsibility than the normal weight group. There was also a significant difference between the two groups in regard to the item "a sense of accomplishment." The overweight group ranked this item higher in importance than the normal weight group did.

In regard to the overall scores on the HPLP and the LHCS, the total groups of subjects scored the highest on the interpersonal support and self-actualization subscales, and the lowest on the health responsibility subscale. There was some support for the linkage between the definition of health and health-promoting behaviors.

The HPLP subscales had the highest correlations with the eudaimonistic subscale of the LHCS ($r = .19 - .39$) and the lowest correlations with the clinical subscale ($r = .04 - .20$). Also, the self-actualization subscale of the HPLP had the highest correlation with the eudaimonistic subscale of the LHCS ($r = .39$). However, for the total groups of subjects, Hudak concluded that the findings did not seem to support the link between health conception and health-promoting behaviors. Despite a health conception oriented to high-level wellness, the subjects tended to demonstrate a low frequency of health-promoting behaviors.

Pender's (1987) Health Promotion Model provided the framework for Volden, Langemo, Adamson, and Oechsle (1990) in conducting a study to determine differences in health and lifestyle measures based on age, gender, and exercise involvement. A sample of 478 adults from a rural-urban region completed the LHCS, the HPLP, the Philadelphia Geriatric Center Multilevel Assessment Inventory (MAI), and the Rosenberg Self-Esteem Scale. Ages of the subjects ranged from 18 to 74 years, with a mean age of 40 years; 60% of the subjects were male; over 95% had completed high school and over 55% had completed college course work; and the median family income ranged from \$25,000 to \$29,000, with 31% of the subjects reporting an income of over

\$40,000. Descriptive statistics and a three-way analysis of variance ($6 \times 2 \times 3$) were used to examine groups that differed from each other along the three dimensions of age, gender, and length of time in regular exercise.

Volden et al. found that there were significant gender differences on several measures. "Men scored higher than women in self-acceptance, whereas women scored higher on measures related to meaning of health, overall health-promoting lifestyle profile, and the HPLP subscales of nutrition, interpersonal support, exercise, and health responsibility" (Volden et al., 1990, p. 23).

Age was a significant variable in regard to only three HPLP subscales: nutrition, exercise, and health responsibility. Volden et al. found a gradual increase in concern for nutritional health with increasing age. There was a steady decline in participation in exercise until the age group of 55 to 64. There was a resurgence of exercise in this age group, followed by a continued decline in the 65 to 74 age group. Health responsibility practices steadily increased with age. Exercisers scored higher on perception of health, meaning of health, total HPLP, and the subscales of nutrition, self-actualization, interpersonal support, exercise, and stress management.

The only two variables not related significantly to exercise were self-acceptance and health responsibility.

Felton and Parsons (1991) also tested Pender's (1987) Health Promotion Model, using the LHCS, the HPLP, the Health Value Survey, and the Problem Solving Inventory. The sample consisted of 593 single, college students who lived on a campus in the southeastern United States. The majority of subjects were White (84%), female (67%), and represented primarily freshmen (46%) and sophomore (22%) students.

Felton and Parsons found that problem solving explained 19% of the health-promoting behavior, with 9% explained by the five modifying factors of race, regular participation in activities, academic performance, maternal education, and gender. The study also revealed that females tended to be self-actualized, but White females assumed more responsibility for health, engaged in more frequent exercise, ate more nutritiously, and had more effective interpersonal support than did Black females. White male subjects exceeded White females only on the exercise factor. Other findings included that group participation was related to positive health behaviors, and the level of maternal education influenced

interpersonal support in males, but influenced females on all health behaviors.

In this study, neither health value nor definition of health contributed to health-promoting behavior. However, effective problem solving was positively related to higher health-promotion scores.

In a secondary analysis study of 364 White, middle class residents of northern Illinois, aged 55 to 91, Volkan (1987) examined the relationship of the dimensions of health conception to the dimensions of health-promoting lifestyle. The clinical, adaptive, and eudaimonistic subscales of health conception were found to contribute significantly to the explained variance in health-promoting lifestyle. The eudaimonistic subscale was found to contribute significantly to the explained variance in the self-actualization subscale of health-promoting lifestyle. The eudaimonistic and clinical subscales were found to contribute significantly to the explained variance in the health responsibility subscale of health-promoting lifestyle. The adaptive and clinical subscales contributed significantly to the explained variance in the exercise, nutrition, and stress management subscales of health-promoting lifestyle. The eudaimonistic and role performance subscales of health conception contributed

significantly to the explained variance in the interpersonal support subscale of health-promoting lifestyle.

Volkan also evaluated which of two alternate models best portrayed the underlying dimensions of health conception, and their relationship to the dimensions of health-promoting lifestyle. Subjects' scores on the four subscales of the LHCS and the six subscales of the HPLP were analyzed using multiple regression analyses and covariance structure modeling (LISREL) techniques. In a comparison of two models, Volkan validated two latent variables underlying the dimensions of health conception. The first latent health conception variable was an eudaimonistic, adaptive, and role performance oriented health conception variable. The second latent health conception variable was found to be a homeostatic clinical health conception dimension.

Health Behavior Studies with LSE Populations

There are few studies in the literature that examine LSE populations in regard to health care or health promotion. Some of the earlier studies that address this population were conducted in the 1960s and include Milio's (1967) examination of values, social class, and community

health services for 569 obstetrical patients at Detroit hospitals. Milio questioned how the value assumptions of the dominant social group, namely the middle class, underlie the organization of the dominant social institutions and provide criteria for evaluating behavior in those institutions. Milio concluded that health services provided for the lower classes should be based on physiologic requirements and not on a middle class mystique, and that such services should be provided in a form consistent with the orientation and pattern of living of low income populations. Health services should include neighborhood-based, nonbureaucratic structures, utilizing low income people for staffing and developing programs that reflect their interests (Milio, 1967).

In 1971 Pratt examined the relationship between socioeconomic status and health, through detailed interviews with 401 mothers with children between the ages of 9 and 13 years living in a northern New Jersey city. Twenty-six percent of the families had incomes over \$10,000, 47% of the families had incomes ranging from \$6,000 to \$9,999, and 27% had incomes under \$6,000. Data from the study revealed that "poorer" personal health maintenance practices among LSE women were significantly related to their lower level of health. "In fact,

low-income women with good health practices were not significantly disadvantaged in health level as compared to higher socioeconomic women" (Pratt, 1971, p. 289). However, exercise, nutrition, and dental hygiene practices were especially deficient among low income women compared to women with high incomes. Alcohol consumption was lower among women with low incomes in comparison to those with high incomes. Sleep, rest, elimination, and smoking habits were not significantly related to socioeconomic status. The study also revealed that a decreased use of professional medical services was related to a lower level of health among low income women. The use of specialized and preventive medical services was also lower for low income women. Health knowledge and health-related equipment in the home were positively related to socioeconomic status.

Steele and McBroom (1972) interviewed 3,243 people in almost 1,000 households in Montana to examine the relationship between socioeconomic status and four indicators of preventive health behavior: physical checkups, dental visits, eye doctor visits, and private insurance coverage. These researchers found that the degree of participation in preventive health behavior was, in part, a function of one's socioeconomic status. The

practice of preventive health behaviors changed dramatically depending on whether or not the subjects had insurance. Subjects did not engage in these preventive health behaviors if they did not have private insurance coverage. There was also a change in the relationship between health behavior and socioeconomic status, depending on the subjects' distance from their usual source of medical care and the recency of illness episodes. The relationship between health behaviors and socioeconomic status was highest for subjects living under 10 miles from their usual source of medical care and who also had at least one illness episode in the past 12 months.

Bullough in 1972 interviewed 806 women from three Los Angeles poverty neighborhoods to determine the relationship between poverty, ethnic identity, and preventive health care. This researcher found that the lower the socioeconomic status, the less likely the mother was to have utilized preventive health services for herself and her children. Income and education were significant factors in predicting most types of preventive care. Alienation factors, including feelings of powerlessness, hopelessness, and social isolation, were

also significant factors related to a low level of utilization of preventive care.

More recently, Muhlenkamp et al. (1985) examined the determinants of health promotion activities in 175 nursing clinic clients in the southwest region of the United States. The majority of subjects were married, White females who reported a high school education or less. Seventy percent of the subjects reported household incomes of less than \$10,000 per year. The Multidimensional Health Locus of Control (MHLC) instrument, the Health Value Survey (HVS), and the Personal Lifestyle Questionnaire (PLQ) were used to assess the impact of the subjects' health beliefs, values, and demographic characteristics on health promotion activities. The type of health care subjects had requested at the clinic for the previous 2 years was categorized as health promotion, illness prevention, health maintenance, or health restorative. Pearson product moment correlations and multiple regression procedures were used to analyze the data.

Muhlenkamp et al. found that health value was not related to self-reported health promotion activities or to types of clinic visits. A strong belief in chance was negatively associated with engaging in health promotion

activities. Also, a strong belief in powerful others was negatively associated with a high percentage of restoration visits to the clinic. Older subjects reported significantly more positive health practices in the areas of substance use/abuse and safety, and they valued health more than did younger subjects. Older subjects also sought more health promotion and maintenance care at the clinic than did younger subjects. The greater the subjects' education, the more they reported engaging in exercise and the higher were their lifestyle scores. Through a stepwise regression analysis, education accounted for most of the variance in lifestyle. "A low belief in chance as a determinant of health, being female, a high ranking on one's individual health, and being older were the other significant predictors, listed in order of importance" (Muhlenkamp et al., 1985, p. 330). These five predictors accounted for 16% of the variance. Being older, having good general health, a low internal locus of control, a high belief in powerful others, and a low income accounted for 18.6% of the variance in the type of health care sought.

Parks and Neutens (1986/1987) examined the health status, locus of control, and health education needs of "poor rural Blacks" (p. 4). Through a random sample of

250 homes, using interviews, they found a discrepancy between how this population perceived their health status and what their health status actually was. Many people rated their health status as being good on a functional basis, even with the actual presence of many health problems. This population also demonstrated a positive state of well-being. Parks and Neutens found health locus of control had no significant effect on health status variables. These researchers recommended that intervention and educational programs not be started without first conducting a close examination of the population for which the programs are intended.

Muhlenkamp and Broerman (1988) examined the relationships among sociodemographic variables, the three Multidimensional Health Locus of Control (MHLC) subscales, Health Value, and health promotion activities as measured by the Personal Lifestyle Questionnaire (Lifestyle). The subjects consisted of 172 clients of a nursing clinic. The subjects were predominantly Caucasian, 66% had a high school education or less, and 70% of the sample reported incomes of \$10,000 or less. Using regression techniques, the following results were found: (a) education had a direct effect on all three subscales of the MHLC, and had direct and indirect effects on lifestyle, (b) women

engaged in more positive health practices than did men, and (c) Chance Health Locus of Control (CHLC) was negatively associated with lifestyle. While Health Value had a direct but small effect on lifestyle, it had no statistically significant effect on MHLC. Age was positively associated with Powerful Others Health Locus of Control (PHLC), but there was no substantial effect of PHLC on lifestyle. It was also found that Internal Health Locus of Control (IHLC) had no effect on lifestyle and the interaction of Health Value and MHLC had no appreciable effect on lifestyle. The researchers concluded that their analysis indicated that education, gender, and CHLC have an effect on lifestyle.

Riffle, Yoho, and Sams (1989) examined the health-promoting behaviors, perceived social support, and self-reported health of 113 Appalachian elderly who were attending nutrition sites in northern West Virginia. Subjects were 56 to 94 years old, were mostly widowed, White females, with a mean education of 11.2 years. Thirty-eight percent of the subjects reported an annual income of under \$6,000, 30% had incomes of \$6,000 to \$10,999, 22% had incomes between \$11,000 and \$15,999, and 68% of the subjects had incomes of \$10,999 or less. The Pearson product moment correlation coefficient, the

t-test, and multiple regression were used to analyze the data obtained from the HPLP, the Personal Resource Questionnaire 85, part 2 (PRQ 2), and a questionnaire containing three self-health questions.

Data supported two hypotheses that health-promoting behaviors were positively related to perceived social support, and that health-promoting behaviors were positively related to self-reported health. The average HPLP score demonstrated significant positive correlations with education and frequency of attending screening clinics for high blood pressure and diabetes. The subscales of the HPLP that correlated most highly with the average HPLP score were health responsibility, self-actualization, and stress management. Analysis of the relationships between the HPLP subscales and sociodemographic variables revealed statistically significant positive correlations between self-actualization and education, self-actualization and income, health responsibility and education, health responsibility and frequency of attending the blood pressure and diabetic screening clinics, and nutrition and frequency of attending the blood pressure and diabetes screening clinics.

The average PRQ 2 scores (perceived social support) demonstrated a significant positive correlation with self-actualization, health responsibility, interpersonal support, and stress management. Self-reported health demonstrated significant positive relationships with exercise and self-actualization. Self-actualization also demonstrated a significant positive correlation with income. There was also a significant positive relationship between education and income.

With the average health-promoting lifestyle as the dependent variable and perceived social support and self-reported health as independent variables, only 13% of the variance was accounted for in a multiple regression analysis. Subjects defined health as being able to do the things one wanted to do; feeling good; being able to care for oneself; freedom from pain, sickness, and disease; and soundness of body. Subjects were asked, "How do you try to keep yourself healthy?" The majority of subjects stated that they followed a proper diet, exercised, kept active, obtained adequate rest and sleep, had regular health checkups, and engaged in self-care behaviors such as monitoring weight and blood pressure. Walking was the form of exercise most frequently listed by the subjects.

Several subjects also noted the importance of attitude, such as keeping happy and in a good frame of mind.

Zapka, Stoddard, Barth, Costanza, and Mas (1989) examined breast cancer screening utilization through interviews of 169 Latina health center clients in eastern Massachusetts. Subjects were between the ages of 45 and 75 years, the majority of subjects were Catholic (72%), had an eighth-grade or lower education (70%), reported an income of less than \$5,000 (90%), and were covered by Medicaid (51%). Seventy-eight percent of the interviews were conducted in Spanish. Study results reinforced the findings of Steele and McBroom (1972) discussed previously in this section. Zapka et al. found that having insurance or entitlement coverage, as well as the teaching and reinforcement provided by a health care provider, played an important role in whether or not subjects ever received a mammogram. The most common reasons given in the study for never having had a mammogram were that it was not recommended (78%), they never had a problem (45%), and they had no money or insurance (10%). While 71% of the subjects who were currently covered by Medicaid had undergone at least one mammogram, only 23% of the currently uninsured and 48% of women with other types of insurance had ever had a mammogram. Zapka et al.

concluded that the roles of insurance and physician referral are underscored further by the relative lack of association between health history, knowledge, and belief factors with screening behavior.

Using a newly developed Spanish version of the HPLP, Kerr and Ritchey (1990) examined health-promoting lifestyles of English-speaking and Spanish-speaking Mexican-American migrant farm workers. Data were collected from 62 Mexican-American migrant farm workers at four different sites in northern Illinois. Subjects ranged in age from 18 to 61 years. There were proportionally more men in the Spanish-speaking subgroup and more women in the English-speaking subgroup. The English-speaking subjects had spent more years in farm work and had a mean of 9.4 years of education compared to a mean of 7.4 years of education for the Spanish-speaking subjects. Almost 26% of the subjects stated that they were likely or very likely to consult a folk medicine practitioner.

Internal consistency of the total HPLP was adequate, with an alpha coefficient of .957 for the English version and .904 for the Spanish version. The alpha coefficients for the subscales of the English version ranged from .558

to .931. The alpha coefficients for the subscales of the Spanish version ranged from .530 to .841.

The mean scores for the Spanish-speaking group tended to be higher than for the English-speaking group on all scales except for interpersonal support. The Spanish-speaking group also reported more frequent behaviors in each of the following three dimensions: self-actualization, exercise, and stress management. Kerr and Ritchey concluded that the behaviors measured, therefore, were culturally relevant and practiced even by the least-acculturated Spanish-speaking subjects.

When the total and subscale scores of the HPLP of both Spanish-speaking and English-speaking farm workers were compared to those of a predominantly non-Hispanic, middle class, midwestern sample, the scores of the migrant farm workers were lower. Kerr and Ritchey concluded that this finding was not surprising in view of migrant farmers lack of access to health-promotion resources and information and their mobile, hard-working lifestyle necessary for survival.

In a review of research literature of health beliefs and preventive behavior, Nemcek (1990) stated that studies support a positive correlation between socioeconomic status and preventive health behaviors. An individual's

health beliefs and socioeconomic status influence who will and will not use preventive health measures. Nemcek concluded that this correlation is of sufficient strength to warrant examination of socioeconomic status whenever health behavior patterns are considered. Additionally, variables that are central to the examination of socioeconomic status, such as occupation, education, and income, provide descriptive information useful in differentiating populations.

Role of the Nurse in Health Promotion

Porter-O'Grady (1985) stated that nursing in the past has had a narrow vision of its role in society. This author went on to say that by limiting its focus to meeting day-to-day illness needs, nursing has missed the opportunity to view the broader perspective of health care. This would also apply to the nurse's role in health promotion. Porter-O'Grady suggested that nursing reprioritize its goals and direct its future practice away from inpatient settings toward the settings where the illness behaviors arise.

Chavigny (1993) stated that the times call for clear and accurate communication between nursing, medicine, and the community in keeping with nursing's ascending leadership position. This author further asserted that

nurses have the ability to contribute substantially to the quality of delivery of care as part of the health care team. Nursing's current strategies to meet the demands of emerging systems for health care reform have made the profession of nursing highly visible (Chavigny, 1993).

Taking another approach to the nurse's role in health promotion, Volden et al. (1990) stated that nurses need to become effective role models by participating in health promotion programs themselves. By being a participant in health promotion programs, nurses can understand firsthand the needs of others and will be better able to design health education programs and foresee potential problems in future program development.

Laffrey (1985b) stated that if the goal of nursing is to promote health, then nurses must direct their research and practice toward determining patterns of behavior that lead to health. Laffrey (1985b) defined the role of the nurse in each of Smith's (1981) four models of health.

Within the clinical model of health, the nurse promotes health by assessing and intervening with clients to alleviate symptoms, promote comfort, and prevent complications of an illness or disease. The nurse also carries out screening and prevention programs to prevent or detect disease in its earliest stages.

In the role performance model of health the nurse promotes health by first assessing clients' roles in life and the abilities needed to perform these roles. The nurse would then assist clients in integrating roles of daily living under their present health problems or stresses.

The nurse promotes health in the adaptive model of health by assisting clients in their ability to engage in effective interaction with their physical and social environment. The nurse also helps clients increase their ability to adapt to their environment by helping them find needed resources.

The nurse promotes health in the eudaimonistic model of health by assisting clients in reaching self-realization and well-being. The nurse can assist clients in the realization of their potential growth and self-actualization in relation to their health and health behavior.

It is also important that nurses know and understand how clients in a specific LSE population define health. Nurses need to know what health-promoting behaviors these clients practice and if these behaviors are based on their definitions of health. By examining LSE populations and assessing their definitions of health and health-promoting

behaviors, needs for this specific population can be identified and defined. Nursing may then better understand the specific needs of LSE populations and appropriate interventions can be initiated, whether they be in the area of illness prevention, health maintenance, or health promotion.

According to Nugent et al. (1988), the concept of health promotion shifts the burden of responsibility for health from the health care system to the consumer. Nugent et al. emphasized that the role of the nurse in health promotion is different for LSE populations compared to middle-class populations. The following observations by Martin and Henry (1989) are only one example of how and why the role of the nurse in health promotion needs to change when working with different populations. Martin and Henry examined several beliefs and values that are specific to LSE populations in American society. In regard to time orientation, the middle class members of society are future oriented and willing to put off gratification until later. The poor, however, are more often present oriented and see no reason for delaying gratification. In examination of activity orientation, the poor are more oriented toward the importance of "being" rather than "doing." In other words, the poor

think that "just getting by or making it is an accomplishment in itself" (Martin & Henry, 1989, p. 31).

In regard to relational orientation, the poor often place greater importance on the family, while the middle class tends to place more emphasis on the importance of the individual. Another aspect of relational orientation is the importance of children versus the parents. In middle-class families, parents' schedules are more likely to be arranged around the children's schedules. However, in poor families, the focus is on the adults, with the children adjusting to adult schedules.

Martin and Henry also commented that verbalization is not always valued equally in all social contexts or among all cultural groups. Lower socioeconomic populations prefer action to philosophizing and intellectualization; therefore, verbalizing their feelings may not be acceptable behavior to them. Martin and Henry recommended that health professionals learn to hear the unspoken messages.

Porter-O'Grady (1993) stated that nurses must "change their leadership style to become agents of change who challenge, question the status quo, and create an atmosphere encouraging self-directed activities, workplace partnerships, and shared outcomes." Barker (1990)

proposed several ways in which health professionals could change the balance of power between professional and client. Nurses can listen to and seriously consider the real concerns that individuals have. Nurses can respect clients and make them feel that what is happening to them is important. Individuals will then feel that they can be the subject of their own lives and not merely the object of other people's deliberations (Barker, 1990). In their role as nurses, they could encourage disadvantaged clients to use existing services more effectively and feel more confident about demanding a service that meets their identified needs.

Summary

The concept of health promotion has become a major focus for nursing research. Health and specifically health promotion are defined in many different ways. It is apparent from this literature review that the majority of researchers see health as being a multidimensional concept that may differ for different populations. This dissertation study used Smith's (1981) and Laffrey's (1986a) definition of health and Pender's (1987) definition of health-promoting behavior. Smith (1981) and Laffrey (1986a) defined four conceptions of health: clinical health, role performance health, adaptive health,

and eudaimonistic health. Pender (1987) defined health-promoting behavior as activities directed toward increasing the level of well-being and the health potential of individuals, as well as families, communities, and society.

Although health is defined differently in various studies, the literature suggests that subjects' definitions of health is not a major correlate of health-promoting behaviors, at least not for White, middle-class populations. Only Laffrey (1985b) and Bagwell (1988) found that individuals with a more complex definition of health practiced more health-promoting behaviors.

A review of the literature also revealed that many variables affect health-promoting behaviors. These variables include: meaning in life, health values, health status, self-esteem, social support, internal health locus of control, self-efficacy, motivation, importance of health, education, body image, and effective problem solving. Demographic variables were not predictive of health-promoting behaviors in the majority of studies. However, in studies conducted by Fehir (1988) and Walker et al. (1988), annual household income and education were major correlates of health-promoting behaviors. Again,

these studies were conducted using mostly White, middle class populations.

In health behavior studies using LSE populations, it was found that socioeconomic status, especially education and income, were major factors in regard to health status and health behaviors practiced by LSE populations. Other variables that affected health behavior of LSE populations include: health values, health status, social support, health insurance, access to health resources, reinforcement provided by health care professionals, age, and gender.

Finally, the literature review concluded with an examination of the nurse's role in health promotion. Health promotion is becoming a major focus of care for the nurse. The nurse's role in health promotion is as varied as the clients he or she works with. Nurses are in a prime position to provide leadership for the restructuring of the health care system that is currently taking place (Chavigny, 1993; James, 1988; Porter-O'Grady, 1985). Defining nursing roles within this new health care system will be important for the nursing profession (Chavigny, 1993). If nursing does not define its own roles, other health professionals and health consumers will define nursing's role (James, 1988; Porter-O'Grady, 1985).

CHAPTER III

PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

The problem of the study was to examine the direct and indirect influences of demographic characteristics, interpersonal influences, situational factors, importance of health, perceived control of health, perceived health status, and definition of health on health-promoting behaviors. Additionally, reliability and validity of the LHCS and the HPLP were estimated for the study population. Finally, the study examined the relationship between definitions of health and health-promoting behaviors in a LSE population.

This chapter addresses the methods and procedures that were used in the study. Included in this chapter is a discussion of the method and design, setting, population and sample, protection of human subjects, instruments that were used, the pilot study, and the collection and treatment of data.

Method and Design

This study tested the Health-Promoting Model for Lower Socioeconomic Populations through the use of

correlational procedures and path analysis. Using path analysis, the accuracy of theoretical propositions is tested (Burns & Grove, 1987). Path analysis is a graphic method that determines whether or not the data are consistent with the model (Burns & Grove, 1987). Through path analysis, the direct and indirect influences of independent variables on a dependent variable are calculated (Kerlinger, 1986). Surveys were used to collect data for the study.

Setting

The setting for the study was a Health Center located in a 177-unit, low-income housing apartment complex. The complex is located in the southern region of the United States, in a city of approximately 65,000 people. The questionnaires were completed at the Health Center and at an extension location. At the Health Center and at the extension location, each subject was provided a quiet area in which to complete the questionnaires.

Population and Sample

The target population for the study was LSE people who live in the southern region of the United States. The accessible population, from which the sample for the study was drawn, was those LSE people living in a medium sized

city in the southern region of the United States who came to the Health Center for services or who received care by the Health Center staff at an extension location.

Individuals met the criteria for services at the Health Center if the annual family income did not exceed:

\$13,329 for a family size of one; \$17,759 for a family size of two; \$22,279 for a family size of three; \$26,799 for a family size of four; \$31,319 for a family size of five; \$35,839 for a family size of six; \$40,359 for a family size of seven; and \$44,879 for a family size of eight (P. Drapo, personal communication, June 24, 1992).

Other criteria for the participants in the study were that they were male or female and over the age of 18 years. Subjects had to be able to read, write, and understand English as determined by questioning the potential subjects at the beginning of the verbal explanation of the study. Because both the Laffrey Health Conception Scale (LSCS) and the Health-Promoting Lifestyle Profile (HPLP) are written at a seventh grade reading level as determined by the Right-Writer computer program, subjects had to have at least a seventh grade educational level.

The sampling technique was that of convenience or accidental sampling. Accidental sampling, according to

Kerlinger (1986), involves using the available subjects at hand. Subjects for the study were those people who came to the Health Center for services or who received care by the Health Center staff at an extension location and who agreed to participate in the study during the time data were collected. These subjects were acquainted with the researcher and the Health Center staff.

Power analysis was used to determine sample size. A power of .80, as recommended by Cohen and Cohen (1983), makes the probability of a Type II error equal to .20. Power of .80 was determined to be an acceptable minimum for the study. In preliminary analysis it was determined that a minimum of 60 subjects was needed to maintain this power.

Protection of Human Subjects

The rights of all subjects were protected in compliance with the Texas Woman's University's current rules and regulations of the Human Subjects Review Committee. Survey research that is not of a sensitive nature and that uses adults as subjects is classified as Category I (no risk) according to the Federal Register Guidelines. This study utilized survey questionnaires. The subjects did not sign their names to the surveys. No numbers or identifying marks appeared on the surveys. The

subjects were assured of anonymity. The study was exempt from review from the Human Subjects Review Committee (Appendix D).

Prior to the collection of data, permission to conduct the study was obtained from the participating agency (Appendix E) and from the Texas Woman's University Graduate School (Appendix F). Participants were given a verbal explanation of the study first to see if they qualified as a subject (Appendix G). Then participants were given a letter further explaining the research study before they completed any of the surveys (Appendix H). The letter to the participants explained their rights as subjects, if they agreed to participate in the study. The letter explained the purposes of the study, the benefits of the study, what was expected of the participants, that their privacy would be protected, and the length of time it would take to complete the questionnaires. The letter explained that the participants had the right to withdraw from the study at any time without penalty. In addition, the letter explained how to obtain results of the study when completed. All subjects placed the questionnaires in a box when they completed them. Completion and return of the questionnaires indicated the subjects' consent to participate in the study. The researcher or the Health

Center staff was available to the subjects to answer any questions that they had.

Instruments

Three questionnaires were used for data collection. They were the Demographic Questionnaire, the Laffrey Health Conception Scale (Laffrey, 1986a), and the Health-Promoting Lifestyle Profile (Walker et al., 1987). These instruments were selected for the study because they were congruent with the theoretical framework. They were also congruent with how the variables of health definitions and health-promoting behaviors were defined for the study. Additionally, an intensive interview was conducted with four subjects to determine their understanding of the items on the questionnaires.

Demographic Questionnaire

The Demographic Questionnaire (Appendix A) is a researcher-developed questionnaire. It was used to obtain information about the characteristics of the sample. The Demographic Questionnaire variables were also used in the path analysis for the study. The standard demographic variables included: age, gender (female and male), education (7th to 9th grade, 10th to 11th grade, high school graduate, some college, college degree, and other

education), ethnic background (White, Black, Hispanic, and other ethnic background), and marital status (single or never married, divorced or separated, widowed, married, shared household or live-in partner, and other marital status). In addition, the following variables were also included on the questionnaire: interpersonal influences (family, friends, nurses, doctors, people on TV, and people on radio), situational factors (transportation), importance of health, perceived control of health, and perceived health status. Each of these variables was measured by one item on the demographic questionnaire. Interpersonal influences were measured by a multiple choice question. Situational factors were measured by a "yes" or "no" response. Importance of health, perceived control of health, and perceived health status were measured by a 6-point Likert scale: Strongly Disagree = 1, Moderately Disagree = 2, Disagree = 3, Agree = 4, Moderately Agree = 5, and Strongly Agree = 6. The researcher realizes that it is difficult to measure a concept accurately with one item. However, it is believed that it is unrealistic to ask this particular population to complete several additional instruments that contain many questions. The concepts of health definition and

health-promoting behaviors were measured with standardized instruments existing in the literature.

Laffrey Health Conception Scale

Health definitions in the study were measured by the Laffrey Health Conception Scale (Appendix B). The Laffrey Health Conception Scale (LHCS) was developed by Dr. Shirley Laffrey (Laffrey, 1986a). Permission to use the LHCS in the study was obtained from Dr. Laffrey (Appendix I). The instrument was based on Smith's (1981) four models of health: clinical, role-performance/functional, adaptive, and eudaimonistic (Laffrey, 1986a). The LHCS consists of 28 items divided into the four subscales of clinical health, role-performance/functional health, adaptive health, and eudaimonistic health. Each subscale contains seven items. The clinical health subscale consists of items 4, 6, 9, 11, 15, 20, and 25. The role-performance/functional health subscale consists of items 3, 5, 10, 17, 21, 24, and 26. The adaptive health subscale consists of items 2, 8, 13, 14, 19, 22, and 27. The eudaimonistic health subscale consists of items 1, 7, 12, 16, 18, 23, and 28.

The LHCS is presented in a 6-point Likert scale format: Strongly Disagree = 1, Moderately Disagree = 2,

Disagree = 3, Agree = 4, Moderately Agree = 5, and Strongly Agree = 6. The subjects agree or disagree with each of the statements describing what "health" or "being healthy" means to them. The statements used in the scale were drawn from the responses of 78 well adults, age 24 to 65, from the midwestern region of the United States to the question: "What do you mean when you say you are very healthy?" The demographic characteristics of this sample were not given. The subjects were a convenience sample of individuals who were attending adult education evening classes (Laffrey, 1986a).

A score can be obtained for each subscale as well as a total score for the instrument. Each subscale score can range from 7 to 42. The total instrument score can range from 28 to 168. The total score indicates the strength of total health conception, allowing for comparisons across groups of individuals (Laffrey, 1986a).

Validity

Both content and construct validity have been estimated for the LHCS. Content validity of the LHCS was estimated by having seven nurse experts independently place each item into one of the four subscales. Twenty-five items achieved 100% interrater agreement, two items achieved 75% interrater agreement, and the remaining item

achieved 65% interrater agreement (S. C. Laffrey, personal communication, January 19, 1990).

Construct validity was estimated using a sample of 141 master's nursing students. Factor analysis using the principal components method with orthogonal varimax rotation yielded four factors that were identical to the factors conceptualized for the development of the instrument. Another factor analysis was then computed using the principal components method and an oblique rotation. This yielded the same factors as the first factor analysis. Two factors (adaptive and functional) were moderately correlated ($r = .42$). Correlations of the other pairs of factors were low (S. C. Laffrey, personal communication, January 19, 1990). Pearson product moment correlation coefficients ranged from .14 to -.15, which supported the findings of the factor analysis (Laffrey, 1986a). Laffrey (1986a) concluded that the LHCS is measuring relatively distinct dimensions of health conception.

Reliability

Reliability of the LHCS was estimated by examining internal consistency of the items and by a test-retest reliability coefficient. The sample that was used to examine internal consistency of items consisted of 141

subjects. The Cronbach's alpha coefficients were estimated for each of the subscales: clinical = .88, role performance/functional = .88, adaptive = .87, and eudaimonistic = .87 (S. C. Laffrey, personal communication, January, 19, 1990). No item to total correlations were provided for the subscales.

Test-retest reliability was estimated using 35 registered nurses during their first semester of baccalaureate study (Laffrey, 1986a). The subjects consisted of 32 women and 3 men, ranging in age from 24 to 45 years, with a mean age of 31 years (Laffrey, 1986a). The test-retest reliability coefficient after 1 week was .84 for the total instrument.

There is no literature to indicate that the LHCS has been used with a LSE population. Therefore, no validity and reliability of the instrument have been estimated for this population, except for the findings of the pilot study conducted by the researcher.

Health-Promoting Lifestyle Profile

Health-promoting behaviors of study subjects were measured by the Health-Promoting Lifestyle Profile (Appendix C). The Health-Promoting Lifestyle Profile (HPLP) was developed by Dr. Susan N. Walker, Dr. Karen R. Sechrist, and Dr. Nola J. Pender of Northern Illinois

University. Permission to use the HPLP in the study was obtained from Dr. Walker (Appendix J). The theoretical background for the HPLP is Pender's (1987) Health Promotion Model. The HPLP measures health-promoting behavior, conceptualized as a multidimensional pattern of self-initiated actions and perceptions. These actions and perceptions serve to maintain or enhance the level of wellness, self-actualization, and fulfillment of the individual (S. N. Walker, personal communication, November 1, 1989).

The items from the Lifestyle and Health Habits Assessment, which was developed by Pender as a clinical nursing tool, were used to develop the HPLP (Walker et al., 1987). The HPLP contains 48 statements regarding the subjects' present way of life or personal habits. There are six subscales: exercise, nutrition, interpersonal support, stress management, health responsibility, and self-actualization. The exercise subscale consists of items 4, 13, 22, 30, and 38. The nutrition subscale consists of items 1, 5, 14, 19, 26, and 35. The interpersonal support subscale consists of items 10, 18, 24, 25, 31, 39, and 47. The stress management subscale consists of items 6, 11, 27, 36, 40, 41, and 45. The health responsibility subscale consists of items 2, 7, 15,

20, 28, 32, 33, 42, 43, and 46. The self-actualization subscale consists of items 3, 8, 9, 12, 16, 17, 21, 23, 29, 34, 37, 44, and 48.

The subjects are asked to indicate the regularity with which they engage in each health behavior. Scoring of the responses to the items is done using a Likert-type format: Never = 1, Sometimes = 2, Often = 3, and Routinely = 4 (S. N. Walker, personal communication, November 1, 1989). A score can be obtained for each subscale as well as a total score for the instrument. The exercise subscale score can range from 5 to 20. The nutrition subscale score can range 6 to 24. The interpersonal support and the stress management subscale scores can range from 7 to 28. The health responsibility subscale score can range from 10 to 40. The self-actualization subscale score can range from 13 to 52. The total instrument score can range from 48 to 192.

Validity

Content and construct validity were estimated for the HPLP. Content validity was estimated using four nursing faculty familiar with health promotion literature. They examined each item for congruence with the concept of health-promoting behavior (Walker et al., 1987). As a result, some items were added and other items that dealt

with prevention and detection of specific diseases were deleted (Walker et al., 1987).

A sample of 173 graduate and undergraduate nursing students and, later, 952 adults (436 female and 516 male) from a variety of community settings in Illinois and North Dakota were used to estimate construct validity (Walker et al., 1987). Subjects' ages ranged from 18 to 88, with a mean of 39.2 years. Walker et al. (1987) stated that although an attempt was made to include people from diverse socioeconomic backgrounds, the majority of the sample was middle class. Family incomes ranged from under \$5,000 to over \$50,000, with the median income being between \$25,000 and \$35,000.

A principal axis factor analysis and oblique rotation of responses to 70 items yielded 16 factors that could be combined into six conceptually valid subscales. The 16 factors explained 56.6% of the variance of the instrument. Further factor analysis and item analysis suggested that a six-factor solution (which explained 38.9% of the variance) was the most efficient and logically consistent (S. N. Walker, personal communication, November 1, 1989). To more efficiently define the composition of the six factors, 22 items were deleted and the remaining 48 items were entered into a principal axis factor analysis with

six factors extracted and obliquely rotated. All items loaded on expected factors at a level of .35 or higher. The six factors explained 47.1% of the variance in the scores on the instrument (S. N. Walker, personal communication, November 1, 1989).

Reliability

Internal consistency and test-retest reliability were estimated for the HPLP. Reliability was estimated using the same sample as was used to estimate construct validity. Internal consistency reliability resulted in an alpha of .922 for the total instrument. Alphas for the six subscales were as follows: exercise, 5 items = .809; nutrition, 6 items = .757; interpersonal support, 7 items = .800; stress management, 7 items = .702; health responsibility, 10 items = .814; and self-actualization, 13 items = .904 (S. N. Walker, personal communication, November 1, 1989). No item to total correlations were provided.

Test-retest reliability was estimated by administering the HPLP twice to a sample of 63 adults, with an interval of 2 weeks between the two testing periods. The Pearson r was .926 for the total instrument and ranged from .808 to .905 for the subscales (S. N. Walker, personal communication, November 1, 1989).

It appears that the HPLP has not been used with a LSE population. Therefore, no validity and reliability of the instrument have been estimated for this population, except for the findings of the pilot study conducted by the researcher.

Intensive Interview

An intensive interview determines whether questions/items are working as intended and, if not, for obtaining clues as to why the questions/items failed (Royston, 1989). According to Royston, there are four main reasons to conduct intensive interviews: to determine whether questions satisfy the survey objectives, to identify the kinds of problems usually found in pretests, to identify hidden sources of response error often missed in pretests, and to identify problems that would be missed in pretests because the pretest sample does not happen to contain any or enough of a specific population.

In the four intensive interviews conducted for this study, subjects first completed the three questionnaires, then agreed to discuss each item on the questionnaires with the researcher. The initial question asked by the researcher for each item on the questionnaire included: "Tell me about the way you answered this statement," or "What does this statement mean to you?" Further

questions were then asked of the subject until the researcher clearly understood what each item on the questionnaire meant to the subject and what the response to an item meant to the subject.

Pilot Study

A pilot study was conducted to test the relationship between health definitions and health-promoting behaviors. The research question was: What is the statistical relationship of health definitions and health-promoting behaviors in one lower socioeconomic population? Additionally, the pilot study was completed to estimate reliability for the LHCS and the HPLP instruments for a lower socioeconomic population.

A descriptive, correlational design was used for the pilot study. Subjects were clients of a nurse-managed health center located in the southern region of the United States. The pilot study used nonprobability convenience sampling. The instruments were given to female and male adults, 18 years of age and older, who were clients of the Health Center. Data were collected from subjects who attended a health fair at the Health Center and a health fair at a low income retirement complex. The only other criteria for subjects was that they had a reported annual gross income of \$13,000 or less. The subjects voluntarily

agreed to participate in the pilot study after being read their rights as subjects. Possible benefits and any risks were also explained to the subjects. Permission to conduct the study was obtained from the Health Center (Appendix K) and from the TWU Human Subjects Review Committee (Appendix L).

The total number of subjects in the pilot study was 39. The ages of the subjects in the pilot study ranged from 22 to 88, with a mean age of 46 years. Fifty-seven percent of the subjects were under the age of 38. Forty-five percent ($n = 17$) of the subjects who answered the question concerning ethnic background were White, 37% ($n = 14$) were Black, and 16% ($n = 6$) were Hispanic (Table 1).

Ninety-five percent of the subjects resided in the state of Texas, with 62% of the subjects being born in Texas. Eighty-seven percent ($n = 34$) of the subjects were female. Twenty-nine percent ($n = 11$) were single, never married. Twenty-one percent ($n = 8$) were divorced. Twenty-four percent ($n = 9$) of the subjects were widowed and 24% were married (Table 2).

Table 1

Subjects' Ethnic Background--Pilot Study

Ethnic Background	Frequency*	Percent
White	17	45
Black	14	37
Hispanic	6	16
American Indian	1	3

*N = 38, 1 subject gave no response to this question.

Table 2

Subjects' Marital Status--Pilot Study

Marital Status	Frequency*	Percent
Single	11	29
Widowed	9	24
Married	9	24
Divorced	8	21
Shared Household	1	3

*N = 38, 1 subject gave no response to this question.

Sixty-two percent ($\underline{n} = 24$) of the subjects had their own transportation. Fifty-nine percent ($\underline{n} = 23$) of the subjects received Medicaid or Medicare benefits. Sixty-five percent ($\underline{n} = 24$) of the subjects indicated that they received care from a private physician. Only 22% ($\underline{n} = 8$) of the subjects had last seen a physician in an emergency room. The majority of the subjects were able to see a physician at his office.

Eighty percent ($\underline{n} = 31$) of the subjects were not employed outside the home and only 18% had another wage earner in the household. Of those subjects who were employed, 80% ($\underline{n} = 8$) were employed as semi-skilled workers, service workers, or laborers (using Green's (1989) categories of major occupational groups).

Eight percent ($\underline{n} = 3$) of the subjects had only a grade school education. Sixty-four percent ($\underline{n} = 23$) had some high school education. Twenty-eight percent ($\underline{n} = 10$) had some college education (Table 3).

Thirty-eight percent ($\underline{n} = 14$) of those who answered the question had household incomes of less than \$2,500. Twenty-four percent ($\underline{n} = 9$) had incomes between \$2,500 and \$4,999. Twenty-seven percent ($\underline{n} = 10$) of the subjects had incomes between \$5,000 and \$9,999 (Table 4).

Table 3

Subjects' Educational Level--Pilot Study

Education	Frequency*	Percent
Grade School	3	8
Some High School	23	64
Some College	10	28

*N = 36, 3 subjects gave no response to this question.

Table 4

Subjects' Income Level--Pilot Study

Income	Frequency*	Percent
< \$2500	14	42
\$2500 - \$4999	9	27
\$5000 - \$9999	10	30

*N = 33, 6 subjects gave no response to this question.

Instruments

Four instruments were used in the pilot study: The Demographic Questionnaire (DQ) (Appendix M), the Laffrey Health Conception Scale (LHCS) (Appendix B), the Health-Promoting Lifestyle Profile (HPLP) (Appendix C), and the Interview Debriefing Questionnaire (IDQ) (Appendix N). The LHCS and the HPLP have been discussed previously under the Instruments section of this chapter. The DQ used in the pilot study included more items than did the demographic questionnaire used in the dissertation study. The DQ for the pilot study included items on occupation, family income, if they had a doctor and when and where they saw the doctor for care, if they had Medicare or Medicaid, what U.S. state they resided in, and where they were born.

The Interview Debriefing Questionnaire (IDQ) was developed by the researcher. It was used after the subjects had completed the other instruments of the study. The IDQ asked the subjects what they thought of the instruments and how they felt about being a participant in the study. The subjects were also encouraged to express any other comments they had about the questionnaires or about the study.

The IDQ was used to gather some quantitative and qualitative data to evaluate the instruments for this population because neither the LHCS or the HPLP had previously been used with a LSE population. The IDQ was also used to gather data from the subjects on what they think health is and what they do to be healthy. This information will be useful to the researcher in the future development of a health instrument for LSE populations.

It took the subjects in the pilot study approximately 20 to 30 minutes to complete the questionnaires. Based on the results of the pilot study, the LHCS and the HPLP were used in the current study. Because the LHCS and the HPLP were not developed by the researcher and are copyrighted, these instruments could not be modified for the current study. The instruments were used as they were; however, reliability and validity were estimated for this population. For the current study, items were deleted and the format was changed on the demographic questionnaire to simplify the questions for the subjects. Also, three new items were added to gather data on importance of health, perceived control of health, and perceived health status. The IDQ was not used for the current study. Instead, an intensive interview was conducted to gather more specific information on the subjects' understanding of the items.

The intensive interview was discussed in an earlier section of this chapter.

Data Analysis and Findings

Internal consistency reliability was estimated using Cronbach's alpha. Alpha coefficients were computed for each of the subscales and for the total instruments. The following tables also show the item-to-total subscale correlations for each item of the subscales. The total number of subjects for each subscale in the following tables vary because the subjects left some of the items blank.

Table 5 shows an alpha of .9277 for the Clinical subscale of the LHCS. This, however, is an inflated alpha because six of the seven item-to-total subscale correlations are above .70. This would indicate that there was incollinearity of items or, in other words, that the items were redundant or overlapping (Nunnally, 1978).

The alpha coefficient for the Role performance subscale shown in Table 6 is .9372. Here again, however, all the item-to-total subscale correlations are over .70.

Table 7 shows an alpha of .8565 for the Adaptive subscale of the LHCS. Only of the seven items were above .70.

Table 5

LHCS Clinical Subscale Internal ConsistencyReliability--Pilot Study

Items	<u>N</u> = 33	Alpha	Item-Subscale Correlation
LHCS4			.5893
LHCS6			.7676
LHCS9			.8676
LHCS11			.8068
LHCS15			.8421
LHCS20			.7890
LHCS25			.7994
Total Subscale		.9277	

Table 6

LHCS Role Performance Subscale Internal ConsistencyReliability--Pilot Study

Items	<u>N</u> = 35	Alpha	Item-Subscale Correlation
LHCS3			.7433
LHCS5			.8532
LHCS10			.7958
LHCS17			.7616
LHCS21			.8667
LHCS24			.7996
LHCS26			.7919
Total Subscale		.9372	

Table 7

LHCS Adaptive Subscale Internal Consistency
Reliability--Pilot Study

Items	<u>N</u> = 34	Alpha	Item-Subscale Correlation
LHCS2			.3193
LHCS8			.5517
LHCS13			.7926
LHCS14			.7662
LHCS19			.6584
LHCS22			.6814
LHCS27			.6961
Total Subscale		.8565	

The Eudaimonistic subscale shown in Table 8 had an alpha of .8795. Here four out of the seven items that make up the subscale have item-to-total subscale correlation values over .70.

The items for the Self-Actualization subscale of the HPLP are shown in Table 9. The alpha is .9205, with 6 items of the total 13 having correlations over .70 and one item having a correlation of under .30. Item number 37 had a correlation of .2017. This would indicate the item may not have been measuring the same concept as the other items.

Table 8

LHCS Eudaimonistic Subscale Internal ConsistencyReliability--Pilot Study

Items	<u>N</u> = 32	Alpha	Item-Subscale Correlation
LHCS1			.5597
LHCS7			.5400
LHCS12			.7443
LHCS16			.8189
LHCS18			.5477
LHCS23			.7281
LHCS28			.7692
Total Subscale		.8795	

Table 9

HPLP Self-Actualization Subscale Internal ConsistencyReliability--Pilot Study

Items	<u>N</u> = 28	Alpha	Item-Subscale Correlation
HPLP3			.6449
HPLP8			.7875
HPLP9			.8447
HPLP12			.6230
HPLP16			.6117
HPLP17			.6948
HPLP21			.7657
HPLP23			.7657
HPLP29			.7183
HPLP34			.6364
HPLP37			.2017
HPLP44			.6729
HPLP48			.7295
Total Subscale		.9205	

The alpha of the Health Responsibility subscale in Table 10 was .7984. There are two items of the 10 that have item-to-total subscale correlations under .30.

In Table 11 the Exercise subscale had an alpha of .8269. Two of the five items have item-to-total subscale correlations over .70.

Table 10

HPLP Health Responsibility Subscale Internal Consistency
Reliability--Pilot Study

Items	<u>N</u> = 30	Alpha	Item-Subscale Correlations
HPLP2			.4550
HPLP7			.2810
HPLP15			.4635
HPLP20			.5082
HLPL28			.4099
HPLP32			.5995
HPLP33			.2502
HPLP42			.6282
HPLP43			.6359
HPLP46			.4866
Total Subscale		.7984	

Table 11

HPLP Exercise Subscale Internal Consistency Reliability--
Pilot Study

Items	<u>N</u> = 34	Alpha	Items-Subscale Correlations
HPLP4			.7073
HPLP13			.7191
HPLP22			.6474
HPLP30			.4980
HPLP38			.5751
Total Subscale		.8269	

Table 12 shows the statistics for the Nutrition subscale. The alpha is .8120, with item-to-total subscale correlations between .30 and .70. This is the only subscale with item-to-total subscale correlations within the correct range.

Table 12

HPLP Nutrition Subscale Internal Consistency Reliability--
Pilot Study

Items	<u>N</u> = 31	Alpha	Item-Subscale Correlations
HPLP1			.5309
HPLP5			.5815
HPLP14			.4192
HPLP19			.6713
HPLP26			.6547
HPLP35			.5831
Total Subscale		.8120	

Table 13 shows the reliability statistics for the Interpersonal Support subscale. The subscale alpha is .8661, with three items with item-to-total subscale correlations greater than .70.

Table 13

HPLP Interpersonal Support Subscale Internal Consistency
Reliability--Pilot Study

Items	N = 31	Alpha	Item-Subscale Correlations
HPLP10			.7464
HPLP18			.6270
HPLP24			.6697
HPLP25			.7274
HPLP31			.4233
HPLP39			.7557
HPLP47			.5679
Total Subscale		.8661	

The Stress Management subscale is shown in Table 14 with an alpha of .7710. Of the seven items, item number 6 has an item-to-total subscale correlation of .7293 and item number 11 has an item-to-total subscale correlation of .2828.

Table 14

HPLP Stress Management Subscale Internal Consistency
Reliability--Pilot Study

Items	<u>N</u> = 30	Alpha	Item-Subscale Correlations
HPLP6			.7293
HPLP11			.2828
HPLP27			.4561
HPLP36			.4285
HPLP40			.4533
HPLP41			.5861
HPLP45			.5683
Total Subscale		.7710	

The total LHCS with its 28 items had an alpha of .9690. There were 17 items that had item-to-total subscale correlations greater than .70. These correlations ranged from .7173 to .8893. Again, this would indicate an inflated alpha. The other 11 item-to-total subscale correlations ranged from .3708 to .6856.

The total HPLP instrument with its 48 items had an alpha coefficient of .9612. There were 14 items that had item-to-total subscale correlations of greater than .70. These correlations ranged from .7047 to .8237. Five items had item-to-total subscale correlations of less than .30. These correlations ranged from .1086 to .2774, indicating

that these items may not belong in the HPLP instrument for this population. Twenty-nine items had item-to-total subscale correlations that ranged from .3422 to .6966.

A Pearson product moment correlation was calculated between the LHCS and the HPLP. The r was .5257, with $p < .001$. This is a moderate positive correlation of the two instruments and a significant p value. This would indicate that if subjects had a high score on the LHCS, they would also tend to have a high score on the HPLP. In other words, if the subjects had a stronger health conception definition, they would be practicing more health-promoting behaviors. This finding answers the research question that asked about the relationship between health definitions and health-promoting behaviors. Additionally, reliability for the LHCS and the HPLP has been estimated for a LSE population.

Use of LHCS and HPLP With LSE Populations

One of the concerns in using the LHCS and the HPLP was the Likert-type formats for the responses to the item statements. In the pilot study, the subjects had less questions and comments about the never to routinely format on the HPLP than they did about the strongly disagree to strongly agree responses on the LHCS. The responses on

the LHCS confused many of the subjects. They preferred to just agree or disagree and not give levels of their agreement or disagreement.

There were several questions asked on the Interview Debriefing Questionnaire (IDQ) that referred to what the subjects thought of the instruments (Table 15). When asked about the clarity of the questions, 82% ($n = 27$) of the subjects stated that they were able to understand the questions.

Ninety-one percent ($n = 30$) stated that they did not leave any of the instrument questions blank. However, when reviewing the surveys, there were some questions left blank when the subject stated on the IDQ that none of the questions were left blank. It is not known whether the subjects did not understand the question that was being asked or whether the question was just overlooked by the subject.

Fifty-eight percent ($n = 19$) of the subjects stated they did not find any of the questions confusing. Seventy-nine percent ($n = 26$) of the subjects stated they found the choices for answering the questions easy. It is possible, however, that the subjects did not want to complain to the researcher about the survey or did not want to appear ignorant about not being able to understand

the questions. Therefore, subjects might have answered that they understood the questions and the choices without really understanding them. While talking to the subjects during the interviews, however, this did not appear to be the case. Most of them appeared to understand the questions and the choice of responses.

Ninety-seven percent ($n = 32$) of the subjects stated that the questions did describe their ideas about health. Ninety-seven percent of the subjects also stated that the questions included what they did to be healthy. However, for some of the subjects who stated that they "exercised" and "watched what they ate," it was obvious from their physical appearances that this was not the case. Perhaps, the subjects' perception of exercise and nutrition behaviors may have been different from the behaviors listed on the HPLP.

The alpha coefficients of the subscales and the instruments as a whole were inflated. However, because the pilot study only had an N of 39 and some data were missing, this may not have been a large enough sample to obtain adequate reliability statistics.

Cronbach's alpha coefficients that were obtained for a LSE population in the pilot study were not very

Table 15

Subjects' Reactions to the LHCS and HPLPQuestionnaires--Pilot Study

Questions	Frequency	Percentage of total subjects (N = 33*)
Understandable	27	82
None Left Blank	30	91
Not Confusing	19	58
Choices Easy	26	79
Described Health	32	97
Included What Participants Did to be Healthy	32	97

*no responses = 6.

different from the alpha coefficients obtained by Laffrey (1986a) for the LHCS and by Walker et al. (1987) for the HPLP. Laffrey and Walker et al. did not state item-to-total subscale correlations for their instruments. Therefore, no comparisons can be made to the pilot study findings.

Additionally, the majority of subjects (82%) indicated that they did not have any difficulty understanding the statements on the instruments or the choices for answering the statements (79%). The majority

of subjects (97%) also reported that the statements on the instruments reflected how they defined health and what they did to be healthy. For the above reasons and because the developers of the instruments will not allow them to be modified, the LHCS and the HPLP were not altered for the dissertation study.

Data Collection

Data collection for the study began after obtaining approvals from the participating Health Center and the Graduate School of Texas Woman's University. Before data collection began, the researcher instructed the Health Center staff on how to administer the instruments to the subjects. Clients who were able to read and write English, who came to the Health Center for services, or who received services by the Health Center staff at an extension location were asked to participate in the study (Appendix G).

Participants were first given a letter to read that explained their rights as subjects if they should agree to participate in the study (Appendix H). It was explained to the participants that completion of the instruments indicated their willingness to act as subjects in the study. Those subjects who voluntarily agreed to participate in the study were then given the three

questionnaires to complete in a quiet area of the Health Center or at an extension location. It took the subjects approximately 15-20 minutes to complete the questionnaires.

On completion of the three questionnaires, subjects were instructed to place the questionnaires in a box with other completed questionnaires. Anonymity was maintained. The intensive interview was conducted with the last four subjects. The four subjects were interviewed to determine their understanding of each of the items on the three questionnaires. The researcher or the Health Center staff was available to answer any questions that the subjects might have before, during, and after completion of the questionnaires.

Treatment of the Data

The data were analyzed in the following manner. The demographic data were summarized, using descriptive statistics, to assist the researcher in describing the sample. Frequency distributions and percentages were used to summarize the data.

Research question number 1 was examined using correlational procedures and path analysis. Path analysis is a special form of applied multiple regression analysis that uses path diagrams (Kerlinger, 1986). In path

analysis, questions about the minimum number of relationships and their directions are asked by observing the sizes of regression coefficients with and without certain variables entered into equations (Tabachnick & Fidell, 1989). Path analysis leads to a determination of whether the influences of independent variables on a dependent variable are direct, indirect, spurious, or a combination of these (Budd & McKeehan, 1986; Kerlinger, 1986).

A potential model using the previously stated variables and health-promoting behaviors was developed from the zero order correlation matrix using significant rs. The standardized regression weight (beta) associated with each independent variable is the value most commonly used for the path coefficients (Munro & Sexton, 1984) and was used in this study. By deleting paths from the model, a more parsimonious causal model can be obtained (Kerlinger & Pedhazur, 1973). There are two major ways to determine whether or not a path should be deleted from the model. One way is statistical significance. The other way is the criterion of meaningfulness (Munro & Sexton, 1984). This study used the criterion of statistical significance. All betas with p values less than .05 were retained (Munro, Visintainer, & Page, 1986).

Research questions number 2 and 3 were examined using Cronbach's alpha coefficients to estimate internal consistency reliability for each of the subscales and for the total LHCS and the HPLP. Research questions number 4 and 5 were examined through factor analysis, a type of construct validity.

To answer research question number 6, Pearson's correlations were computed between the total scores and the subscale scores of the LHCS and the HPLP. By using the Pearson's correlation coefficients, the researcher was able to show the strength of the relationship among the subscale scores and between scores on the total instruments.

CHAPTER IV

ANALYSIS OF DATA

The analysis of the data collected in the study is presented in this chapter. This study tested the Health-Promoting Model for Lower Socioeconomic (LSE) Populations through the use of correlational procedures and path analysis. This chapter presents a description of the sample, the findings of the study, additional findings, and a summary of the findings.

Description of Sample

A demographic questionnaire was used to collect data to describe the subjects. The demographic data included information regarding age, gender, education, ethnic background, and marital status. Frequency distributions and percentages were also used to examine the variables of interpersonal influences, situational factors (transportation), importance of health, perceived control of health, and perceived health status. Frequency distributions and percentages for these variables are shown in Table 16 and Table 17.

A total of 82 subjects returned usable questionnaires. An additional 12 subjects returned

Table 16

Demographic Characteristics of Subjects

Variable	Frequency	Percent
<u>Age</u>		
18-30 years	29	35.3
31-40 years	21	25.6
41-50 years	18	21.9
51-60 years	5	6.1
61-70 years	3	3.6
Over 70 years	1	1.2
Missing Data	<u>5</u>	<u>6.1</u>
	82	100.0
<u>Gender</u>		
Female	69	84.1
Male	<u>13</u>	<u>15.9</u>
	82	100.0
<u>Education</u>		
7th-9th Grade	10	12.2
10th-11th Grade	25	30.5
High School Graduate	19	23.2
Some College	11	13.4
College Degree	7	8.5
Other	9	11.0
Missing Data	<u>1</u>	<u>1.2</u>
	82	100.0
<u>Ethnic Background</u>		
White	48	58.5
Black	18	22.0
Hispanic	13	15.9
Other	<u>3</u>	<u>3.7</u>
	82	100.0
<u>Marital Status</u>		
Single, never married	19	23.2
Divorced or Separated	26	31.7
Widowed	5	6.1
Married	29	35.4
Shared Household	2	2.4
Missing Data	<u>1</u>	<u>1.2</u>
	82	100.0

Table 17

Study Variables of Interpersonal Influences, Situational Factors, Importance of Health, Perceived Control of Health, and Perceived Health Status

Variable	Frequency	Percent
<u>Interpersonal Influences</u>		
Family	45	54.9
Friends	7	8.5
Nurses	1	1.2
Doctors	15	18.3
People on TV	2	2.4
People on Radio	0	0.0
Other People	2	2.4
Combination of the above	5	6.1
Missing Data	<u>5</u>	<u>6.1</u>
	82	100.0
<u>Situational Factors</u>		
Transportation - Yes	60	73.2
Transportation - No	<u>22</u>	<u>26.8</u>
	82	100.0
<u>Importance of Health</u>		
Strongly Disagree	1	1.2
Moderately Disagree	1	1.2
Disagree	1	1.2
Agree	19	23.2
Moderately Agree	13	15.9
Strongly Agree	45	54.9
Missing Data	<u>2</u>	<u>2.4</u>
	82	100.0
<u>Perceived Control of Health</u>		
Strongly Disagree	3	3.7
Moderately Disagree	4	4.9
Disagree	5	6.1
Agree	36	43.9
Moderately Agree	12	14.6
Strongly Agree	20	24.4
Missing Data	<u>2</u>	<u>2.4</u>
	82	100.0

(table continues)

Variable	Frequency	Percent
<u>Perceived Health Status</u>		
Strongly Disagree	4	4.9
Moderately Disagree	3	3.7
Disagree	20	24.4
Agree	23	28.0
Moderately Agree	17	20.7
Strongly Agree	12	14.6
Missing Data	<u>3</u>	<u>3.7</u>
	82	100.0

incomplete questionnaires and, therefore, were not counted as subjects in the study. The largest percentage of subjects in this study were married, White females, between the ages of 18 and 30, and they had a 10th-11th grade education. The majority of subjects had their own transportation and agreed that their health was very important to them, that they were in control of their health, and believed that they were very healthy. Family and doctors were chosen by these subjects as having the most influence on what they did to be healthy. Only one subject listed a nurse as having the most effect on what he or she did to be healthy.

On the LHCS and the HPLP a score can be obtained for each subscale as well as a total score for the instruments. The subscale scores for the LHCS can range from 7 to 42. The Clinical subscale mean score for this

study was 30.0. The Role subscale mean score for the study subjects was 32.0. The Adaptive subscale mean score was 31.9. The Eudaimonistic subscale mean score was 31.2. The total instrument score indicates the strength of total health conception and can range from 28 to 168. The total LHCS mean score for this study group was 125.

The range of scores for the HPLP are different for each subscale. The range for the Self-Actualization subscale is 13-52. The mean score for the study subjects was 36.2. The range of scores for the Health Responsibility subscale is 10-40, with the mean being 21.9 for the study subjects. The Exercise subscale scores can range from 5-20, and the mean was 9.3 for the study group. The Nutrition subscale scores can range from 6-24. The subjects' mean score was 14.2. The range of scores for the Interpersonal Support subscale is 7-28, with a mean of 19.7 being obtained in this study. The range of scores for the Stress Management subscale is 7-28, and a mean of 17.4 was calculated for the study subjects. Finally, the total HPLP score can range from 48-192. The total mean score for the HPLP in this study was 118.8.

Findings

The findings are presented according to each research question. There were six research questions in the study.

Research Question 1

Research question number 1 asked: What are the direct and indirect influences of the following factors on health-promoting behaviors in a LSE population:

demographic characteristics of age, gender, education, ethnic background, and marital status; interpersonal influences; situational factors (transportation); importance of health; perceived control of health; perceived health status; and definition of health.

Research question number 1 was examined by using path analysis and multiple regression procedures using the SPSS-X computer program. A zero order correlation matrix was developed to examine the correlation between demographic variables and the Importance of Health, Perceived Control of Health, Perceived Health Status, and the Definitions of Health (Clinical, Role, Adaptive, and Eudaimonistic). The demographic variables were made up of 19 categories: age; gender (female, male); education variables of seventh to ninth grade, tenth to eleventh grade, high school graduate, some college, college degree, and other education; ethnic background of White, Black, Hispanic, and other ethnic background; marital status of single or never married, divorced or separated, widowed,

married, shared household or live-in partner, and other marital status.

The Situational Factors included the one variable of transportation. The Interpersonal Influences included the following variables of: family, friends, nurses, doctors, people on TV, people on radio. Two categories were added to this variable after the data were coded. The categories of "other people" and "combination of other people" were added because five subjects checked more than one category of people and two subjects wrote in other people ("myself" and "nobody") that had not been listed. With the two added categories of interpersonal influences, the total number of demographic characteristics, interpersonal influences, and situational factors equaled 28 variables.

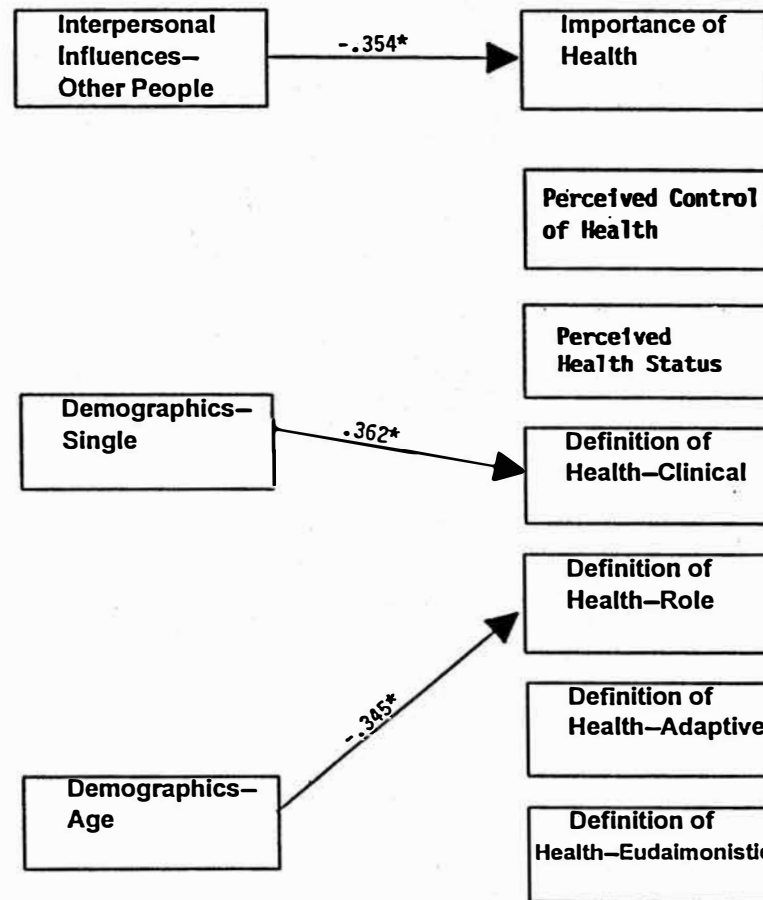
The potential model was to be developed from the zero order correlation matrix using significant rs of .3 or above. However, after correlations were completed and revealed to be weak (ranging from .001 to .445) the multiple regression analysis was completed using all of the previously mentioned 28 variables as the independent variables. The seven dependent variables were: Importance of Health, Perceived Control of Health, Perceived Health Status, Clinical Definition of Health,

Role Definition of Health, Adaptive Definition of Health, and Eudaimonistic Definition of Health. Figure 3 depicts the results of seven multiple regression analyses.

The first hierarchical multiple regression analysis used the above 28 variables as independent variables and the Importance of Health as the dependent variable. The results were $R^2 = .320$, Adjusted $R^2 = .013$, $F = 1.04$, $p = .437$. Of the 28 independent variables, only the path between the Other People variable of Interpersonal Influences and Importance of Health had a significant beta weight ($-.354$, $p = .019$) (see Figure 3).

The second hierarchical multiple regression analysis used the previously mentioned 28 variables as independent variables and the Perceived Control of Health as the dependent variable. There were no paths between the independent variables and the dependent variables that were significant and had a beta weight greater than .3 (see Figure 3). Statistically, the R^2 was .306, Adjusted R^2 was $-.008$, and F was .976, with p of .51.

The third hierarchical multiple regression analysis used the previously mentioned 28 variables as independent variables and the Perceived Health Status as the dependent variable. There were no paths between the independent variables and the dependent variable that were significant



* $p < .05$.

Figure 3. Respecified empirical model with interpersonal influences--other people, demographics--single, and demographics--age as the independent variables and importance of health, perceived control of health, perceived health status, and definition of health as the dependent variables. Standardized beta weights are shown.

and had a beta weight greater than .3 (see Figure 3). Statistically, the \underline{R}^2 was .379, Adjusted \underline{R}^2 was .093, and \underline{F} was 1.33, with \underline{p} of .2.

The fourth hierarchical multiple regression analysis used the previously mentioned 28 variables as independent variables and the Clinical Definition of Health as the dependent variable. Multiple regression indicated $\underline{R}^2 = .380$, Adjusted $\underline{R}^2 = .111$, $\underline{F} = 1.41$, $\underline{p} = .149$. Of the 28 independent variables, only the path between the Demographic Characteristic of being Single and the Clinical Definition of Health had a beta weight greater than .3 (beta = .362) and was significant in the equation ($\underline{p} = .031$) (see Figure 3).

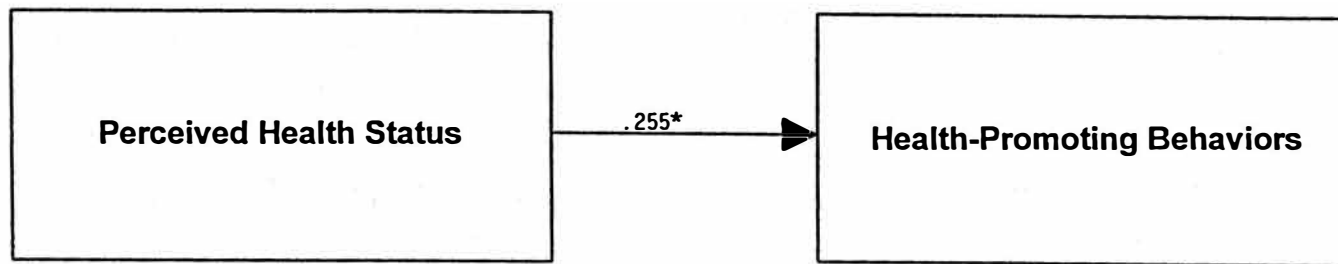
The fifth hierarchical multiple regression analysis used the previously mentioned 28 variables as independent variables and the Role Definition of Health as the dependent variable. The results were $\underline{R}^2 = .367$, Adjusted $\underline{R}^2 = .092$, $\underline{F} = 1.33$, $\underline{p} = .192$. Of the 28 independent variables, only the path between the Demographic Characteristic of Age and Role Definition of Health had a beta weight greater than .3 (beta = $-.345$) and was significant in the equation ($\underline{p} = .021$) (see Figure 3).

The sixth hierarchical multiple regression analysis used the previously mentioned 28 variables as independent

variables and the Adaptive Definition of Health as the dependent variable. There were no paths between the 28 independent variables and the dependent variable that were significant and had a beta weight greater than .3 (see Figure 3). The R^2 was .350, Adjusted R^2 was .069, and F was 1.24, with p of .252.

The seventh hierarchical multiple regression analysis used the previously mentioned 28 variables as independent variables and the Eudaimonistic Definition of Health as the dependent variable. There were no paths between the 28 independent variables and the dependent variable that were significant and had a beta weight greater than .3 (see Figure 3). Statistically, the R^2 was .293, Adjusted R^2 was -.013, and F was .957, with p of .531.

Figure 4 was also developed by using hierarchical multiple regression analysis. The independent variables entered into this equation were those that had significant beta weights with the previous dependent variables and all the previous dependent variables that were now being considered as independent variables. The independent variables in this analysis were Other People of Interpersonal Influences, Demographic Characteristics of Age and being Single, Importance of Health, Perceived Control of Health, Perceived Health Status, Clinical



* $p = .05$.

Figure 4. Respecified empirical model with perceived health status as the independent variable and health-promoting behaviors as the dependent variable. The standardized beta weight is shown.

Definition of Health, Role Definition of Health, Adaptive Definition of Health, and Eudaimonistic Definition of Health. The dependent variable entered in this equation was Health-Promoting Behaviors. The results were $R^2 = .378$, Adjusted $R^2 = .280$, $F = 3.82$, $p = .0004$. Of the 10 independent variables entered into the equation, only the path between Perceived Health Status and Health-Promoting Behaviors was significant ($p = .052$), with a beta weight of .255.

Figure 5 was developed using hierarchical multiple regression analysis. The independent variables in this equation were all those variables that had significant beta weights from the previous multiple regression analyses. All other variables that did not have any significant beta weights were deleted from this equation. The independent variables entered into the equation for this analysis were the Other People variable of Interpersonal Influences, the Demographic Characteristics of Age and being Single, Importance of Health, Perceived Health Status, Clinical Definition of Health, and Role Definition of Health. The dependent variable in this equation was Health-Promoting Behaviors. Multiple regression revealed $R^2 = .322$, Adjusted $R^2 = .250$, $F = 4.48$, $p = .0004$. There were two paths that were

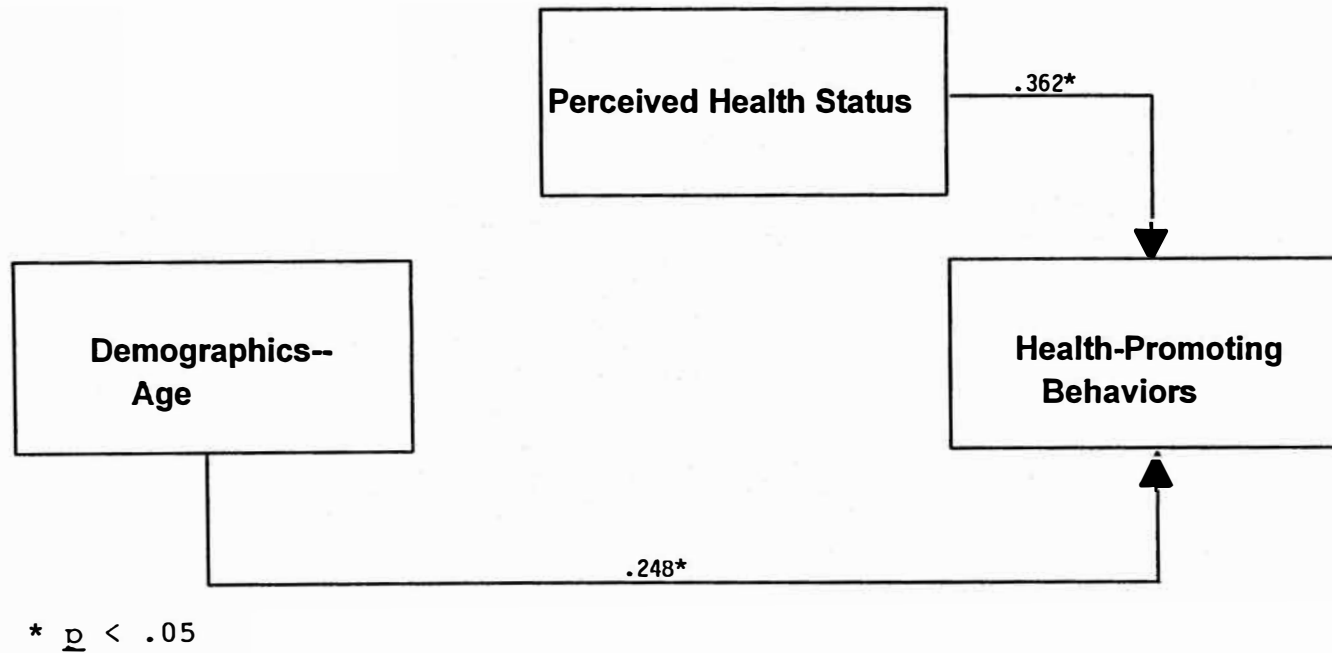
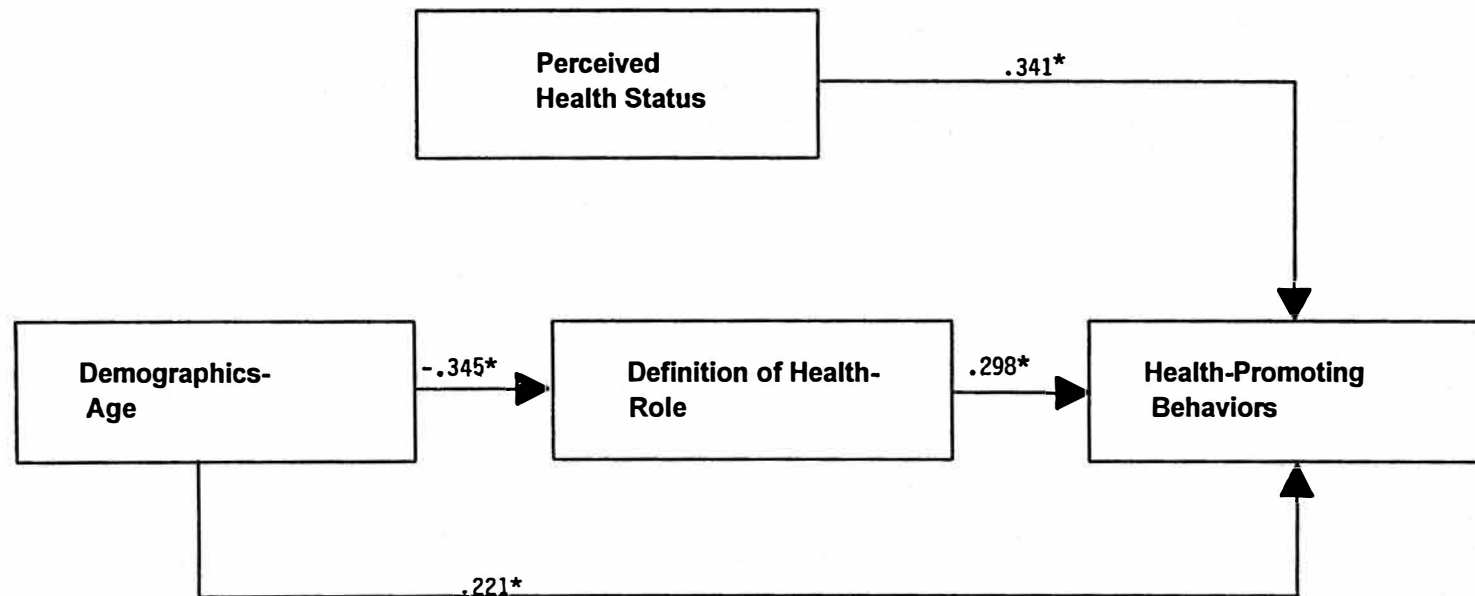


Figure 5. Respecified empirical model with perceived health status and age as the independent variables and health-promoting behaviors as the dependent variable. Standardized beta weights are shown.

significant in this equation. The beta weight for the path between Age and Health-Promoting Behaviors was .248 ($p = .032$). The beta weight for the path between Perceived Health Status and Health-Promoting Behaviors was .362 ($p = .003$).

The Final Model is represented in Figure 6. The independent variables entered into this equation that had significant beta weights from previous analyses were Age, Perceived Health Status, and Role Definition of Health. The dependent variable was again Health-Promoting Behaviors. With the independent variables in the equation, $R^2 = .310$, Adjusted $R^2 = .281$, $F = 10.48$, $p < .0001$. The Final Model resulted in a beta weight of .221 for the direct path between Age and Health-Promoting Behaviors ($p = .03$). Age also had an indirect path to Health-Promoting Behaviors through Role Definition of Health. The beta weight for the path between Age and Role Definition of Health was $-.345$ ($p = .021$). The beta weight for the path between Role Definition of Health and Health-Promoting Behaviors was .298 ($p = .007$). The beta weight for the path between Perceived Health Status and Health-Promoting Behaviors was .341 ($p = .002$). There are three independent variables in the Final Model. The correlations of the Final Model variables are listed in



*p < .05.

Figure 6. Final model. Respecified empirical model with age, role definition of health, and perceived health status as the independent variables and health-promoting behaviors as the dependent variable. Standardized beta weights are shown.

Table 18. The multiple R or effect size is .557. The R^2 or variance explained is .310 or 31%. Using the formula $L = f^2(n - k - 1)$ with alpha set at .05, power was calculated as .99.

Table 18

Correlations Among Variables in the Final Model

Variables				
	Age	Role Definition of Health	Perceived Health Status	Health-Promoting Behaviors
Age	1.00	-.112	.013	.192
Role Definition of Health		1.00	.336	.388
Perceived Health Status			1.00	.445
Health-Promoting Behaviors				1.00

Research Questions 2 and 3

Research questions number 2 and 3 asked: What is the reliability of the LHCS with a LSE population? and What is the reliability of the HPLP with a LSE population?

Questions number 2 and 3 were examined using Cronbach's alpha coefficients to estimate internal consistency reliability for each of the subscales and for the total LHCS and the HPLP. The Cronbach's Alpha for each of the subscales and the total instruments are shown in Table 19

and Table 20. The Cronbach's alpha for each of the subscales of the LHCS and for the HPLP was greater than .70. The Cronbach's alpha for the LHCS was .9699 and the Cronbach's alpha for the HPLP was .9459.

Table 19

Internal Consistency Reliability for Each Subscale and
Total Scale of LHCS

LHCS Scales	Cronbach's Alpha
Clinical	.9002
Role	.9237
Adaptive	.9297
Eudaimonistic	.9039
Total LHCS	.9699

Table 20

Internal Consistency Reliability for Each Subscale and
Total Scale of HPLP

HPLP Scales	Cronbach's Alpha
Exercise	.8138
Nutrition	.8219
Interpersonal Support	.8165
Stress Management	.7853
Health Responsibility	.8504
Self-Actualization	.8915
Total HPLP	.9459

Research Questions 4 and 5

Research questions number 4 and 5 asked: What is the validity of the LHCS with a LSE population? and What is the validity of the HPLP with a LSE population? Questions number 4 and 5 were examined for construct validity by using factor analysis. The LHCS, which consists of four subscales, yielded four factors for the study data. The four factors explained 74.9% of the variance in the final statistics. The instrument items, however, did not load on the same factors as identified by Laffrey. The HPLP,

which consists of six subscales, factored out to 13 factors for the study data. The 13 factors explained 77% of the variance in the final statistics. However, the first six factors explained 57.5% of the variance in the study but, again, the instrument items did not load on the same factors as identified by Pender.

Research Question 6

Research question number 6 asked: What are the pairwise correlations between the total scores and the subscale scores of the Laffrey Health Conception Scale (clinical, role performance/functional, adaptive, and eudaimonistic) and subscale scores of the Health-Promoting Lifestyle Profile (exercise, nutrition, interpersonal support, stress management, health responsibility, and self-actualization) for a LSE population? Research question number 6 was analyzed using the Pearson's product moment correlation coefficient (r). The significant subscale and total scale correlations are presented in Table 21. Significant subscale correlations ranged from .2245 ($p < .05$) between the LHCS subscale of Role Definition of Health and the HPLP subscale of Health Responsibility to a high correlation of .5251 ($p < .01$) between the LHCS subscale of Eudaimonistic Definition of Health and the HPLP subscale of Self-Actualization. The

Table 21

Significant Subscale and Total Scale Correlations Between LHCS and HPLP

HPLP Scales	LHCS Scales		
	r value p value		
	Clinical	Role	Adaptive
Exercise			
Nutrition		.2705 $p < .05$.3001 $p < .01$
Interpersonal Support	.2740 $p < .05$.4557 $p < .01$.4900 $p < .01$
Stress Management	.2590 $p < .05$.2510 $p < .05$.3524 $p < .01$
Health Responsibility		.2245 $p < .05$.2613 $p < .05$
Self-Actualization	.3676 $p < .01$.4659 $p < .01$.5040 $p < .01$
Total HPLP	.2901 $p < .01$.3882 $p < .01$.4435 $p < .01$

(table continues)

HPLP Scales	LHCS Scales	
	<u>r</u> value	p value
	Eudaimonistic	Total LHCS
Exercise		
Nutrition	.3439 $p < .01$.3191 $p < .01$
Interpersonal Support	.4247 $p < .01$.4687 $p < .01$
Stress Management	.2959 $p < .01$.3332 $p < .01$
Health Responsibility	.3165 $p < .01$.3618 $p < .05$
Self-Actualization	.5251 $p < .01$.5340 $p < .01$
Total HPLP	.4636 $p < .01$.4539 $p < .01$

highest correlation was .5340 between the total LHCS and the HPLP subscale of Self-Actualization. There was also a significantly high correlation between the total LHCS instrument and the total HPLP instrument ($r = .4539$, $p < .01$).

Additional Findings

At the end of the data collection, an intensive interview was conducted with four of the subjects--three females and one male. The following statements were asked of each of the subjects in regard to each item on the Demographic Questionnaire, the LHCS, and the HPLP: "Tell me about the way you answered this statement" and "What does this statement mean to you?" Those items about which subjects had comments and suggestions are discussed here.

On the Demographic Questionnaire, subjects stated it would be easier to understand and answer if the researcher just asked the subject's birthdate or age and not the date, month, and year in which they were born. In regard to education, two of the four subjects stated it would be easier to understand if the researcher just asked the subject to write down the years of schooling completed and not make them choose from a list. One subject stated that education was a "personal thing" and might be left blank.

Item number 6 on the Demographic Questionnaire asked:

Who has the most effect on what you do to be healthy?

Subjects suggested that healthy be defined first, or that the word "influences" be used instead of "effect."

Another subject wanted some type of spiritual health to be included in the list of options.

Two of the four subjects would have preferred to answer items number 8, 9, and 10 on the Demographic Questionnaire with yes or no or agree or disagree and not be given a range of answering options from strongly disagree to strongly agree. Two of the subjects also thought item number 9 should be explained more or reworded to "I am in charge of my health."

The LHCS was examined next. From the subjects' responses to the items it was sometimes apparent that they forgot that each of the items on the LHCS was a completion of the statement "Health or being healthy means:" that was stated on the top of the first page of the LHCS questionnaire. The subjects seemed to have a more difficult time understanding what the item statements were asking on the LHCS. However, very few subjects asked any questions while they were completing the three study questionnaires. On the LHCS instrument, item number 2 was confusing to one subject. She did not understand what kind of changes the statement was referring to. Two

subjects stated that the phrase "creatively living life" in item number 7 was confusing and they were uncertain what the phrase meant. Two subjects wanted to know if item number 8 was referring to physical or mental health. One subject wanted to know if item number 9 was referring to the present or the future. One subject was uncertain if the word "function" in item number 10 was referring to mental or physical functioning.

With item number 13, one subject wanted to make a distinction between whether this item was referring to mental or physical health. To her, mental health was not a part of "being healthy." The word "environment" in item number 14 was confusing to all of the subjects. Three of the subjects stated it had something to do specifically with the outdoors, the trees, the sun. One subject stated "environment" referred to the cleanliness of your house or washing your hands.

The word "actualizing" in item number 16, which stated "actualizing my highest and best aspirations," was also disliked by the subjects. Two subjects stated this has nothing to do with health. Another subject stated that item 16 was an impossibility for most people. One subject stated that item 16 referred to the way you presented yourself and the way you socialized with people.

Item number 18 of the LHCS was confusing to two of the subjects. One subject stated that "living at top level" meant being rich, having the best homes, clothes, and schools, and that this was unimportant to her. Another subject stated that "living at top level" had nothing to do with health or "everyday life," but instead could only be reached once in awhile. This subject also stated that she did not mark her disagreement with this statement on the questionnaire because she did not want to be negative.

Item number 23, "realizing my full potential," was confusing to the subjects. They compared this item as being the same as items number 16 and 18. Two of the subjects stated that this item referred to mental health and should not be on the questionnaire. One subject stated that "realizing my full potential" was an impossibility. Another subject stated that he may realize his full potential, but he does not do it. The subject stated "I think about it, so is that healthy?"

Two of the subjects stated that item number 25, "having no physical or mental incapacities," was "perfect health" and, therefore, another impossibility and unrealistic. Two subjects stated item number 26 had to do

with the expectations you had of yourself and had to do with rating yourself.

Lastly, the subjects examined each item on the HPLP. The subjects stated that the response options of Never, Sometimes, Often, and Routinely should be defined. One subject stated that to her, Routinely meant daily, Often meant every other day or every 2 to 3 days, and Sometimes meant once or twice a week. Another subject stated that Sometimes meant "occasionally," Often meant "a lot," and Routinely meant "a whole lot."

One subject stated that item number 3 "like myself" should have a yes or no response. One subject stated that item number 7, having your cholesterol level checked, was not realistic for being healthy and that it was "just one more thing to worry about." One subject thought that the words "enthusiastic and optimistic" in item number 8 were "too big" and should be replaced with "always think the best of things." Two subjects stated that item number 9 was confusing, and that "growing and changing" were two different things. One subject suggested the item should be reworded to "feel like I am doing things that are good for me."

One subject found item number 17 confusing and stated that goals did not have anything to do with health. She

also stated, however, that it makes her feel bad about herself to answer never, and she would feel too negative by doing this, so she never uses it. Two subjects did not believe that praising other people for their accomplishments, item number 18, and looking forward to the future, item number 21, were a part of being healthy. One subject stated that touching and being touched, item number 24, was not part of health. Another subject stated that some people would interpret this statement as indicating sexual abuse and, therefore, not healthy.

One subject was confused about the phrase "fulfilling interpersonal relationships," in item number 25, and thought the words were "too big." Another subject did not think this was part of health, but was part of "mental health."

One subject was concerned with item number 27, stating that relaxation and meditation were too different things. The subject stated that relaxation was good, but that it was against her religion to meditate. Again, two subjects did not think that item number 29, respecting your own accomplishments, and item number 33, attending educational programs on improving the environment, had anything to do with health.

Three subjects did not think that the words "interesting and challenging," in item number 34, were appropriate for that statement and again were not part of health. One subject stated that most people do not want a challenge in their lives. All the subjects thought that the term "basic four food groups," in item number 35, should be explained, although one subject stated that many people would know the term and what it meant from the W.I.C. (Women, Infants, and Children) Program. Two subjects thought item number 37, their living environment, referred only to their house or apartment.

Two subjects did not like the word "recreational" in item number 38 and were glad that it was defined for them. Two subjects did not think that item number 39, expressing concern and warmth to others, should be on a health questionnaire. One subject was uncertain what item number 41, constructive ways to express feelings, meant. She suggested that it say "I express my feelings well." Two subjects again thought that item number 44, "am realistic about the goals that I set," was confusing in regard to health and should not be included on the questionnaire.

In regard to item number 45, one subject stated that most people do not consciously think about stress or how to control it. The same subject was also confused by the

phrase "personal health care" in item number 46. She stated it probably meant personal hygiene. One subject stated that if touching and being touched by people, in item number 47, had to do with feelings of trust and love, then it was important for health. Two subjects again pointed out that item number 47 was "mental" health, not physical health.

Two subjects stated that everyone is put on earth for a purpose, item number 48. One subject stated that a person "has to listen to your heart and God and your heart will lead the way to the rainbow." However, only one subject thought that item number 48, "believe that my life has purpose," was a part of being healthy.

Summary of Findings

A total of 82 subjects participated in this research study. The largest percentage of subjects were married, White females, between the ages of 18 and 30, and they had a 10th-11th grade education. The majority of subjects had their own transportation and agreed that their health was very important to them, that they were in control of their health, and believed that they were very healthy. Family and doctors were chosen by these subjects as having the most influence on what they did to be healthy. Only one

subject listed a nurse as having the most effect on what he or she did to be healthy.

The study tested the Health-Promoting Model for Lower Socioeconomic Populations through the use of correlational procedures and path analysis. The study examined the direct and indirect influences of demographic characteristics, interpersonal influences, situational factors, importance of health, perceived control of health, perceived health status, and definition of health on health-promoting behaviors in a LSE population. Additionally, reliability and validity of the LHCS and the HPLP were estimated for the study population. Finally, the study examined the relationship between definitions of health and health-promoting behaviors in a LSE population.

In the final path analysis model, the independent variables were Age, Role Definition of Health, and Perceived Health Status. The dependent variable was Health-Promoting Behaviors. With the independent variables in the equation, $R^2 = .310$, Adjusted $R^2 = .281$, $F = 10.48$, $p < .0001$. The final model revealed a beta weight of .221 for the path between Age and Health-Promoting Behaviors ($p = .03$). The beta weight for the path between Age and Role Definition of Health was $-.345$ ($p = .021$). The beta weight for the path between Role

Definition of Health and Health-Promoting Behaviors was .298 ($p = .007$). The beta weight for the path between Perceived Health Status and Health-Promoting Behaviors was .341 ($p = .002$). There is an indirect path from Age to Role Definition of Health to Health-Promoting Behaviors. The direct paths are from Age to Health-Promoting Behaviors, from Role Definition of Health to Health-Promoting Behaviors, and from Perceived Health Status to Health-Promoting Behaviors.

There are three independent variables in the final model. The multiple R or effect size is .557. The R^2 or variance explained is .310 or 31%. Using the formula $\underline{L} = \underline{f}^2(n - k - 1)$ with alpha set at .05, power was calculated as .99.

The Cronbach's alpha for each of the subscales of the LHCS and for the HPLP was greater than .70. The Cronbach's alpha for the LHCS was .9699 and the Cronbach's Alpha for the HPLP was .9459.

Construct validity for the LHCS and the HPLP was examined using factor analysis. Factor analysis of the LHCS revealed four factors that explained 74.9% of the variance. Factor analysis of the HPLP revealed 13 factors that explained 77% of the variance.

Pearson's product moment correlation coefficients were used to examine the relationships between the subscales and the total instruments of the LHCS and the HPLP. Exercise was the only subscale of the HPLP that did not correlate significantly with any of the subscales of the LHCS. The highest correlations were between the HPLP subscale of Self-Actualization and the total LHCS subscales of Adaptive Definition of Health, Eudaimonistic Definition of Health, and the total LHCS. The LHCS subscale of Clinical Definition of Health correlated significantly with fewer of the HPLP subscales than did any of the other LHCS subscales.

As a result of the intensive interviews, it was revealed that the subjects did not like the response options ranging from Strongly Disagree to Strongly Agree on the LHCS. The subjects found the items on the LHCS to be more confusing than the items on the HPLP. The subjects also seemed to define health as physical health and did not think that mental health, as they called it, was a part of being "healthy." Additionally, the responses of Never, Sometimes, Often, and Routinely on the HPLP may have been confusing to the subjects.

CHAPTER V

SUMMARY OF THE STUDY

This study examined the factors influencing health-promoting behaviors in a lower socioeconomic (LSE) population. This chapter describes how the study was conducted and includes a discussion of the findings and conclusions. Recommendations for further study are also presented.

Summary

Through the use of correlational procedures and path analysis, the study tested the Health-Promoting Model for LSE Populations. The direct and indirect influences of demographic characteristics, interpersonal influences, situational factors, importance of health, perceived control of health, perceived health status, and definition of health on health-promoting behaviors was examined.

The following are the research questions examined in the study.

1. What are the direct and indirect influences of the following factors on health-promoting behaviors in a LSE population?

- (a) Demographic characteristics:
 - (1) age
 - (2) gender
 - (3) education
 - (4) ethnic background
 - (5) marital status
- (b) Interpersonal influences
- (c) Situational factors (transportation)
- (d) Importance of health
- (e) Perceived control of health
- (f) Perceived health status
- (g) Definition of health

2. What is the reliability of the Laffrey Health Conception Scale (LHCS) with a LSE population?

3. What is the reliability of the Health-Promoting Lifestyle Profile (HPLP) with a LSE population?

4. What is the validity of the LHCS with a LSE population?

5. What is the validity of the HPLP with a LSE population?

6. What are the pairwise correlations between the total scores and the subscale scores of the Laffrey Health Conception Scale (clinical, role performance/functional, adaptive, and eudaimonistic) and subscale scores of the

Health-Promoting Lifestyle Profile (exercise, nutrition, interpersonal support, stress management, health responsibility, and self-actualization) for a LSE population?

The conceptual framework for the study was based on Smith's (1981) Models of Health, Pender's (1987) Health Promotion Model and the researcher-developed Health-Promoting Model for LSE Populations. Based on a literature search and a philosophic inquiry, Smith (1981) defined health using four models: the Eudaimonistic model, the Adaptive model, the Role-performance model, and the Clinical model. Pender's (1987) Health Promotion Model is based on a synthesis of research findings from studies of health promotion and wellness behavior. Pender's Model consists of cognitive-perceptual factors, modifying factors, and participation in health-promoting behavior.

The third model presented in the conceptual framework is a researcher-developed model for LSE populations that is based on the works of Smith (1981) and Pender (1987). The Health-Promoting Model for LSE Populations consists of the following factors: (a) demographic characteristics, (b) interpersonal influences, (c) situational factors,

(d) importance of health, (e) perceived control of health, (f) perceived health status, (g) definition of health, and (h) health-promoting behaviors. It was proposed that the first three factors have both a direct and indirect effect on health-promoting behaviors and the other four factors have a direct influence on health-promoting behaviors of LSE populations.

A review of the literature was presented within five areas of discussion. These areas included Definitions of Health, Health Promotion, Health Promotion Research Studies, Health Behavior Studies With LSE Populations, and the Role of the Nurse in Health Promotion. The review of the literature revealed that health is defined in many different ways, but the majority of researchers see health as being a multidimensional concept that may differ for different populations. A review of the literature also revealed that many variables affect health-promoting behaviors. These variables include: meaning in life, health values, health status, self-esteem, social support, internal health locus of control, self-efficacy, motivation, importance of health, education, body image, and effective problem solving. Demographic variables were not predictive of health-promoting behaviors in the majority of studies. Finally, the literature review

concluded with an examination of the nurse's role in health promotion. In summary, the nurse's role in health promotion is as varied as the clients he or she works with.

Three instruments were used in the study: the Demographic Questionnaire, the Laffrey Health Conception Scale (LHCS) that included the subscales of clinical definition of health, role-performance/functional definition of health, adaptive definition of health, and eudaimonistic definition of health, and the Health-Promoting Lifestyle Profile (HPLP) that included the subscales of exercise, nutrition, interpersonal support, stress management, health responsibility, and self-actualization. A total of 82 subjects participated in the study. The surveys were completed at a Health Center located in a low income housing apartment complex and at an extension location. Both the Health Center and the extension location were located in the southern region of the United States.

The largest percentage of subjects in this study were married, White females, between the ages of 18 and 30, and had a 10th-11th grade education. The majority of subjects had their own transportation and agreed that their health was very important to them. The subjects also believed

that they were in control of their health, and that they were very healthy. Family and doctors were chosen by these subjects as having the most influence on what they did to be healthy. Only one subject listed a nurse as having the most effect on what he or she did to be healthy.

On the LHCS and the HPLP a score can be obtained for each subscale as well as a total score for the instruments. The subscale scores for the LHCS can range from 7 to 42. The subjects of this study scored lowest on the Clinical Definition of Health subscale (30.0). The Role Definition of Health subscale mean score for the study subjects was 32.0. The Adaptive Definition of Health subscale mean score was 31.9. The Eudaimonistic Definition of Health subscale mean score was 31.2. The total instrument score indicates the strength of total health conception and can range from 28 to 168. The total LHCS mean score for this study group was 125.

The range of scores for the HPLP is different for each subscale. The range for the Self-Actualization subscale is 13-52. The mean score for the study subjects was 36.2. The range of scores for the Health Responsibility subscale is 10-40, with the mean being 21.9 for the study subjects. The Exercise subscale scores can

range from 5-20, and the mean was 9.3 for the study group. The Nutrition subscale scores can range from 6-24. The subjects' mean score was 14.2. The range of scores for the Interpersonal Support subscale is 7-28, with a mean of 19.7 being obtained in this study. The range of scores for the Stress Management subscale is 7-28, and a mean of 17.4 was calculated for the study subjects. Finally, the total HPLP score can range from 48-192. The total mean score for the HPLP in this study was 118.8.

Research question 1 was examined using path analysis and multiple regression procedures. Research questions 2 and 3 were examined using Cronbach's alpha coefficients to estimate internal consistency reliability for each of the subscales and for the total LHCS and the HPLP. Research questions 4 and 5 were examined through factor analysis, a type of construct validity. Pearson's product moment correlation coefficients were computed between the total scores and among the subscale scores of the LHCS and the HPLP to answer question number 6.

In the final path analysis model, the independent variables are Age, Role Definition of Health, and Perceived Health Status. The dependent variable is Health-Promoting Behaviors. With the independent variables in the equation, $\underline{R}^2 = .310$, Adjusted $\underline{R}^2 = .281$,

$F = 10.48$, $p < .0001$. The final model resulted in a beta weight of .221 for the path between Age and Health-Promoting Behaviors ($p = .03$). The beta weight for the path between Age and Role Definition of Health was $-.345$ ($p = .021$). The beta weight for the path between Role Definition of Health and Health-Promoting Behaviors was .298 ($p = .007$). The beta weight for the path between Perceived Health Status and Health-Promoting Behaviors was .341 ($p = .002$). There is an indirect path from Age to Role Definition of Health to Health-Promoting Behaviors. The direct paths are from Age to Health-Promoting Behaviors, from Role Definition of Health to Health-Promoting Behaviors, and from Perceived Health Status to Health-Promoting Behaviors.

There are three independent variables in the final model. The multiple R or effect size is .557. The R^2 or variance explained is .310 or 31%. Using the formula $\underline{L} = \underline{f}^2(n - k - 1)$ with alpha set at .05, power was calculated as .99.

The Cronbach's alpha for each of the subscales of the LHCS and for the HPLP was greater than .70. The Cronbach's alpha for the LHCS was .9699 and the Cronbach's alpha for the HPLP was .9459.

Construct validity for the LHCS and the HPLP was examined using factor analysis. Factor analysis of the LHCS revealed four factors that explained 74.9% of the variance. Factor analysis of the HPLP revealed 13 factors that explained 77% of the variance.

Pearson's product moment correlation coefficients were used to examine the relations between the subscales and the total instruments of the LHCS and the HPLP. Exercise was the only subscale of the HPLP that did not correlate significantly with any of the subscales of the LHCS. The highest correlations were between the HPLP subscale of Self-Actualization and the total LHCS subscales of Adaptive Definition of Health, Eudaimonistic Definition of Health, and the total LHCS. The LHCS subscale of Clinical Definition of Health correlated significantly with fewer of the HPLP subscales than did any of the other LHCS subscales.

As a result of the intensive interviews, it was revealed that the subjects did not like the response options ranging from Strongly Disagree to Strongly Agree on the LHCS. The subjects found the items on the LHCS to be more confusing than the items on the HPLP. The subjects also seemed to define health as physical health and did not think that mental health, as they called it,

was a part of being "healthy." The responses of Never, Sometimes, Often, and Routinely on the HPLP may also have been confusing to the subjects.

Discussion of Findings

Research question 1 asked what are the direct and indirect influences of the factors of age, gender, education, ethnic background, marital status, interpersonal influences, situational factors, importance of health, perceived control of health, perceived health status, and definition of health on health-promoting behaviors in a LSE population? Through the use of path analysis, it was revealed that Age, Perceived Health Status and Role Definition of Health had a direct effect on Health-Promoting Behaviors. Age also had an indirect effect on Health-Promoting Behaviors through Role Definition of Health.

These results support Pender's (1987) Health Promotion Model. Pender theorized that Age had an indirect effect on health-promoting behaviors. Pender also theorized that perceived health status and definition of health had a direct effect on health-promoting behaviors. However, Pender theorized that there are many other variables that also have an effect on health-

promoting behaviors that were not revealed in the current study.

The finding that perceived health status had an effect on health-promoting behaviors is similar to Fehir's (1988) findings. Fehir found that perceived health status was a significant contributor in explaining health-promoting behaviors in a study of 167 men. Speake et al. (1989) also found that perceived health status was a significant predictor of healthy lifestyles in their study of 297 subjects of north Florida. Riffle et al.'s (1989) study results supported the finding that perceived health status (self-reported health) was positively related to health-promoting behaviors in 113 Appalachian elderly. In Weitzel's (1989) study of 179 nonprofessional employees, it was also found that health status was predictive of health-promoting behaviors. Weitzel concluded "that the better a person believes his health to be, the more likely he will act in ways to maintain it" (p. 102).

In the current study, role definition of health had a direct effect on health-promoting behaviors. This is consistent with Laffrey's role definition of health, that as long as the subjects were able to perform their assigned roles, such as mother, housewife, employee, they did not consider themselves to be sick. Bender (1985),

Christiansen (1981), and Felton and Parson (1991), however, found that definition of health was not a significant predictor of health behavior. Volkan (1987) found in his study of 364 white, middle-class residents of northern Illinois, that while the clinical, adaptive, and eudaimonistic definitions of health contributed significantly to the explained variance in health-promoting behaviors, the role definition of health did not.

In the current study, age had a direct and indirect effect on health-promoting behaviors and contributed to the explained variance. The research studies of Muhlenkamp and Broerman (1988) and Walker et al. (1988) also found that age had an impact on health-promoting behaviors. Walker et al. revealed that older adults had higher scores in overall health-promoting lifestyle and in the subscales of health responsibility, nutrition, and stress management than either young or the middle-aged adults. However, Christiansen's (1981) study of 387 subjects, Duffy's (1988a) study of 262 women, and Pascucci's (1987) study of 30 well-elderly subjects did not support the finding that age had an effect on health-promoting behaviors.

In another similarity with the current study, Bagwell (1988) found that there was a statistically significant interaction between age and the role definition of health. Bagwell found that older males and younger females tended to believe that being able to perform their assigned roles meant that they were healthy. Woods et al. (1988) found that only older women reported more role performance health images (definitions) in their study to elicit health definitions from over 500 women. In the current study, however, a negative relationship was found between age and the role definition of health. This means that as the age of the subjects increased, the less role definition of health they had.

It is interesting to note that several studies (Christiansen, 1981; Fehir 1988; Pender, 1987; Rew, 1990; Walker et al., 1988) found education to be a predictor of health-promoting behaviors. This was not true, however, in the current study.

The variable Interpersonal Influences did not appear to have a significant effect on health-promoting behaviors in a LSE population. It was interesting that only one subject selected a nurse as having the most effect on what he or she did to be healthy. While there is nothing in the current literature review to support this finding, it

is not surprising. A LSE population may have little contact with a nurse. This population's only contact with a nurse may be at a Health Center, such as where this study was conducted, or in an emergency room of a hospital. This population may need more education in regard to the role of a nurse.

In the final path analysis model, 31% of the variance was explained for health-promoting behaviors by the three independent variables of Age, Role Definition of Health, and Perceived Health Status. The power, with alpha set at .05, was .99

Research questions 2 and 3 were concerned with reliability of the LHCS and the HPLP with a LSE population. The Cronbach's alpha for each of the subscales of the LHCS and for the HPLP was greater than .70, ranging from .7853 for Stress Management to .9297 for Adaptive Definition of Health. This indicates that the subscales are reliable for this study population. The established reliability for the subscales of the LHCS ranged from .87 to .88 (S. C. Laffrey, personal communication, January, 19, 1990). The established reliability for the subscales of the HPLP ranged from .702 to .904 (S. N. Walker, personal communication, November 1, 1989).

The Cronbach's alpha for the total LHCS in this study was .9699, and the Cronbach's alpha for the total HPLP was .9459. This indicates that the two instruments used to collect data for this study were reliable for the population. The established internal consistency reliability for the total HPLP was an alpha of .922 (S. N. Walker, personal communication, November 1, 1989). Internal consistency reliability was not reported for the total LHCS, but the test-retest reliability coefficient after 1 week was .84 (Laffrey, 1986a).

Research questions 4 and 5 asked what is the validity of the LHCS and the HPLP with a LSE population. Factor analysis was used to examine construct validity. In this research, the LHCS yielded four factors and explained 74.9% of the variance in the final statistics. The LHCS does, in fact, consist of four subscales, but many of the items loaded on different subscales in the present study. The amount of variance explained by the four factors was not specified by the developer of the tool (Laffrey, 1986a). Construct validity for the LHCS in the LSE population appears to be satisfactory.

In this study, construct validity of the HPLP yielded 13 factors that explained 77% of the variance. The first six factors explained 57.5% of the variance, but many of

the items loaded on different subscales in the present study. The HPLP consists of six factors/subscales and explains 47.1% of the variance (S. N. Walker, personal communication, November 1, 1989). The other seven factors that were revealed may represent other variables that were not examined in the current study.

Research question 6 asked what are the pairwise correlations between the total scores and the subscale scores of the LHCS and the HPLP for a LSE population. Significant subscale correlations ranged from .2245 ($p < .05$) between the LHCS subscale of Role Definition of Health and the HPLP subscale of Health Responsibility to a high correlation of .5251 ($p < .01$) between the LHCS subscale of Eudaimonistic Definition of Health and the HPLP subscale of Self-Actualization. The highest correlation was .5340 between the total LHCS and the HPLP subscale of Self-Actualization. This would indicate that those subjects who had a stronger health conception definition practiced more self-actualizing health-promoting behaviors.

Of the HPLP subscales, only Exercise did not correlate significantly with any of the LHCS subscales. The Clinical Definition of Health correlated significantly with fewer of the HPLP subscales than did any of the other

LHCS subscales. The other three LHCS subscales (Role, Adaptive, and Eudaimonistic) correlated significantly with all the HPLP subscales except Exercise.

As expected, the Eudaimonistic Definition of Health subscale correlated highly ($r = .5251$, $p < .01$) with the practices of Self-Actualization health behaviors. Also as expected, the correlation of the total HPLP instrument was significantly lower with the Clinical Definition of Health subscale ($r = .2901$, $p < .01$) than with the Eudaimonistic Definition of Health subscale ($r = .4636$, $p < .01$). These same types of correlations between definitions of health and the total scores on the HPLP were also found in Hudak's (1988) study of 140 normal weight and 115 overweight male Army personnel. However, Hudak concluded that overall the study findings did not support the link between health conception and health-promoting behaviors.

In the current study, there was a significantly high correlation between the LHCS instrument and the HPLP instrument ($r = .4539$, $p < .01$). This would indicate that the stronger the health conception definition, the more health-promoting behaviors the subjects practiced. In Bagwell's (1988) study of 160 subjects, a high positive correlation between the total LHCS and the total HPLP was also found.

An intensive interview was conducted with four subjects after they completed the three study questionnaires. In regard to each item on each of the three questionnaires, the subjects were asked "Tell me about the way you answered this statement" and "What does this statement mean to you?" In regard to the LHCS, the subjects did not like the response options on many of the items and would have preferred to answer yes or no or agree and disagree. From the subjects' responses to the items it was sometimes apparent that they forgot that each of the items on the LHCS was a completion of the statement, "Health or being healthy means:" that was stated on the top of the first page of the LHCS questionnaire. The subjects seemed to have a more difficult time understanding what the item statements were asking on the LHCS. However, very few subjects asked any questions while they were completing the three study questionnaires.

One subject stated that the items on the HPLP were easier to understand than the items on the LHCS. Another subject stated that the HPLP reminded him of things he could do to be healthier. Another subject, however, stated that many of these items did not belong on a questionnaire about health, unless we were "checking for

depression or anxiety." Some of the responses obtained on the HPLP may be inaccurate because as one subject stated, she did not want to answer Never to an item, because it made her feel bad.

Before the LHCS and the HPLP are used again with this population, the items on the instruments need to be reworded. Even though all the subjects reported at least a seventh grade education, it was obvious that many of the words used in the item statements were "too big," as stated by some of the subjects. The responses for the item statements may also need to be changed for a LSE population. Some study subjects preferred a simpler response such as Agree or Disagree or Yes or No.

Conclusions and Implications

The following are conclusions and implications based upon the findings of this study:

1. Health is very important to people in a LSE population, and they believe that they are in control of their health. The implication for nursing is that health teaching and health promotion activities may be accepted by this group. Further emphasis needs to be placed in this area rather than on treating illnesses after they occur.

2. Although the variable of Interpersonal Influences was not found to be a significant predictor of Health-Promoting Behaviors in the Final Model, family members and doctors appeared to have some influence over the health-promoting behaviors performed by this population. Nurses need to determine why they appear to have little influence on health promotion in this group in society.

3. Based on the results of the path analysis and the resulting Health-Promoting Model for Lower Socioeconomic Populations, Age, Perceived Health Status, and Role Definition of Health are indicators of Health-Promoting Behaviors for a LSE population. While these variables have some predictive capability in regard to health-promoting behaviors, because of the small amount of explained variance (31%), other predictors are needed. Only three independent variables emerged as predictors of health-promoting behaviors. This may be because there are other variables that were not included in the model, initially, that may be a better indicator of health-promoting behaviors in a LSE population. Other variables need to be included in the model for LSE populations and other models need to be tested.

4. The instruments appear to be reliable and valid for this population. However, the intensive interviews

revealed that some of the items may have been confusing for the subjects. Therefore, the instruments should be modified before using them again with a LSE population.

Recommendations for Further Study

Based on the findings of this study, the following recommendations are suggested:

1. Further investigate the relationship of Age, Role Definition of Health, and Perceived Health Status to Health-Promoting Behaviors in a LSE population in a setting that is not a Health Center to decrease the threat of selecting subjects who may be biased toward health.
2. Replicate the study using the current study instruments with modifications made to the item statements and responses so the subjects may have a better understanding of them.
3. Other predictors of health-promoting behaviors for a LSE population may be obtained through the use of qualitative study of what health means to this population. With the results of qualitative study a new instrument could be created that might more accurately measure health-promoting behaviors for a LSE population.
4. Further investigate the finding that only one subject selected a nurse as having the most effect on what he or she did to be healthy. A qualitative study asking

subjects what they know about the role of a nurse or asking where and how subjects come in contact with a nurse would help nurses provide services to meet the health care needs of this population.

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APPENDIX A

Demographic Questionnaire

COMPLETION AND RETURN OF THE SURVEY TO ME SHOWS YOUR
WILLINGNESS AND PERMISSION TO PARTICIPATE IN THIS STUDY.

Please complete the following statements. Do not sign your name.

1. Date, Month and Year in which you were born:

Please check one answer in each of the following categories:

2. Sex:

_____ Female

_____ Male

3. Education:

_____ 7th - 9th Grade

_____ 10th - 11th Grade

_____ High School Graduate

_____ Some College

_____ College Degree

_____ Other (specify) _____

4. Ethnic Background:

_____ White or Caucasian

_____ Black or Afro-American

_____ Hispanic

_____ Other (specify) _____

5. Martial Status:

- ☐ Single, never married
☐ Divorced or Separated
☐ Widowed
☐ Married
☐ Shared household, live-in partner (male or female)
☐ Other (specify) _____

6. Who has the most effect on what you do to be healthy?

- ☐ Family
☐ Friends
☐ Nurses
☐ Doctors
☐ People on TV
☐ People on radio

7. Do you have your own transportation?

- ☐ Yes
☐ No

Please circle one answer to each of the following statements:

	Strongly Disagree	Moderately Disagree	Disagree	Agree	Moderately Agree	Strongly Agree
8. My health is very important to me.	1	2	3	4	5	6
9. I control my own health.	1	2	3	4	5	6
10. I am very healthy.	1	2	3	4	5	6

APPENDIX B

Laffrey Health Conception Scale

Information regarding this copyrighted instrument may be obtained from:

Shirley Cloutier Laffrey, Ph.D., MPH, R.N.
Associate Professor & Division Chair
Nursing Systems, Community Health, and
Mental Health Nursing
The University of Texas at Austin
School of Nursing
1700 Red River
Austin, TX 78701-1499

APPENDIX C

Health-Promoting Lifestyle Profile

Information regarding this copyrighted instrument may be obtained from:

Susan Noble Walker, Ed.D., R.N.
Associate Professor and Co-Director
Health Promotion Research Program
Social Science Research Institute
Northern Illinois University
DeKalb, Illinois 60115-2854

APPENDIX D

Human Subjects Review Committee Approval Form

TEXAS WOMAN'S UNIVERSITY
DENTON DALLAS HOUSTON
DENTON

PROSPECTUS FOR THE DISSERTATION

This prospectus proposed by: Kathleen A. Kucera

Social Security Number: #505-82-8382

Titled: Factors Influencing Health Promoting Behaviors
In A Lower Socioeconomic Population

Has been read and approved by the members of his/her research committee.

This research (check one):

☒ Is Exempt from Human Subjects Review Committee review because:
data will be collected from anonymous questionnaires.

Requires Full Human Subjects Review Committee review because:

Requires Expedited Human Subjects Review Committee review because:

Research Committee:

Type name

Dr. Rose Nieswiadomy (Chair)

Dr. Patti Hamilton

Dr. Peggy Drapo

Dr. Barbara Lease

Dr. Carolyn Gunning
Dean, College of Nursing

Signature

Rose Nieswiadomy
Patti Hamilton
Peggy J. Drapo
Barbara Lease

Carolyn Gunning 7/20/92
Signature Date

APPENDIX E

Agency Permission Form

**TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING**

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE TWU C.A.R.E.S. Health Center

GRANTS TO Kathleen A. Kucera

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

Factors Influencing Health-Promoting Behaviors
In A Lower Socioeconomic Population

The conditions mutually agreed upon are as follows:

1. The agency (may) (may not) be identified in the final report.
2. The name ~~of~~ consultative or administrative personnel in the agency (may) (may not) be identified in the final report.
3. The agency (wants) (does not want) a conference with the student when the report is completed.
4. Other _____

Date: 12-24-98

Kathleen A. Kucera
Signature of student

Regina J. Davis
Signature of Agency Personnel
Rose Hesivakom
Signature of Faculty Advisor

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

APPENDIX F

Graduate School Approval Letter

TEXAS WOMAN'S UNIVERSITY
DENTON DALLAS HOUSTON
THE GRADUATE SCHOOL
P.O. Box 22479, Denton, Texas 76204-0479 817/898-3400



August 17, 1992

Ms. Kathleen Kucera
P.O. Box 23751
Denton, TX 76204

Dear Ms. Kucera:

I have received and approved the Prospectus for your research project. Best wishes to you in the research and writing of your project.

Sincerely yours,

Leslie M Thompson

Leslie M. Thompson
Associate Vice President for Research
and Dean of the Graduate School

dl

cc Dr. Rose Nieswiadomy
Dr. Carolyn Gunning

APPENDIX G

Verbal Explanation to the Participant

Verbal Explanation

Hello. My name is _____. I am helping Kathy Kucera, a doctoral nursing student at Texas Woman's University, college her health surveys as part of the requirement for her degree. In order to participate in the study you have to be 18 years old, be able to read and write English, have completed the seventh grade, and have a low family income. Do you qualify for this study?

(If the potential participant answers "yes" to the above question, continue with the explanation. If the potential participant answers "no," thank them for their interest and willingness to participate).

Next, please read this letter (give the participant the "Letter to the Potential Participant"). It will explain in more detail the study and what is required of you. Please ask me any questions you may have while reading the letter.

(If, after reading the "Letter to the Potential Participant," the participant agrees to become a subject in the study, please continue with the surveys).

APPENDIX H

Letter to the Participant

Dear Potential Participant:

I would like you to participate in a survey. This survey is to find out what you think about health. You are asked to answer whether you agree or disagree with the statements concerning the meaning of health and your beliefs about being healthy. You will also be asked about your health behaviors. There are no right or wrong answers. It will take you about 20 or 30 minutes to answer these statements. The purpose of the study is to identify your health needs. The results of this health study will allow the nurses at the Health Center to provide better care for you and your families.

Your participation in this survey is strictly voluntary. You do not have to take part in this study. Your care by the TWU C.A.R.E.S. nurses will not be affected if you decide not to participate. Your privacy will be protected. Your name will not be used on the survey. No one will know how you answered the questions. You are free to stop at any time. You are also free not to answer any question that you are not comfortable in answering.

There are no risks involved for you if you participate in this survey. Nothing else is required of you once the survey is completed. The information you give will help nurses meet the health needs of this community. Results of this survey will be available at the Health Center and at Heritage Oaks. Please feel free at any time to ask one of the nurses if you have any questions about this research study.

YOUR WILLINGNESS AND PERMISSION TO PARTICIPATE IN THIS STUDY WILL BE SHOWN BY YOUR COMPLETION OF THE QUESTIONNAIRE.

Thank you for your time and for considering being in this study.

Kathleen A. Kucera, RN
TWU Doctoral Candidate

APPENDIX I

Permission to Use Laffrey Health
Conception Scale

School of Nursing
Department of Mental Health,
Community and Administrative
Nursing
San Francisco, California
94143-0808
415/476-1504
FAX 415/476-8042

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



January 19, 1990

Kathleen Kucera
1000 N. Bell Apt. 108
Denton, TX 76201

Dear Ms. Kucera:

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 C. Laffrey

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

Enc.

APPENDIX J

Permission to Use Health-Promoting Lifestyle Profile

Northern Illinois University 
DeKalb, Illinois 60115-2854

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

November 1, 1989

Maisie Kashka, Ph.D., R.N.
Assistant Professor
College of Nursing
Texas Women's University
PO Box 23026
Denton, TX 76204

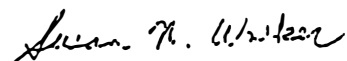
Dear Dr. Kashka:

This letter will confirm permission for you and Kathleen Kucera to use the 48-item Health-Promoting Lifestyle Profile with clients at your nurse-managed health center for underserved populations. You may have copies made from the form that I sent previously. Content should not be altered in any way and the copyright/permission statement at the end must be reproduced.

Again, I would appreciate receiving a report of your use for our files. I remain interested in receiving an abstract of the proposal which you submitted in June; I hope that you were successful in meeting that deadline and that it will be favorably reviewed.

Best wishes to you and your students with your continuing work in health promotion.

Sincerely,



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

APPENDIX K

Agency Permission Form for
Pilot Study

TEXAS WOMAN'S UNIVERSITY
DENTON DALLAS HOUSTON
COLLEGE OF NURSING
P.O. Box 23026, Denton, Texas 76204, 817/898-2401



MEMO

TO: Kathleen A. Kucera
Research Assistant

FROM: Peggy J. Drapo, Ph.D., R.N. *PJ*
Professor and Director of Advanced Education in
Community Health Nursing Grant

Charlotte R. Patrick, M.S.N., M.Ed., R.N. *CP*
Director of the Master's Program, Denton Campus

DATE: 6/14/90

RE: Research at Texas Woman's University C.A.R.E.S. Health Center

We have read your contract related to your research in the TWU C.A.R.E.S. Health Center. We agree that the questionnaire and data generated can be used for your dissertation. Any publications or presentations made by faculty as a result of the survey tool developed with your assistance at the TWU C.A.R.E.S. Health Center will also include your name. We believe that we have an understanding as outlined in your letter about how your own research and the use of the tool will be carried out. Your proposal follows our policies and procedures for TWU C.A.R.E.S. Health Center.

APPENDIX L

Approval from Human Subjects Committee
for Pilot Study

TEXAS WOMAN'S UNIVERSITY
DENTON DALLAS HOUSTON
OFFICE OF RESEARCH AND GRANTS ADMINISTRATION
P.O. Box 22939, Denton, Texas 76204 817/898-3375



April 3, 1990

Kathleen A. Kucera
Research Assistant
TWU C.A.R.E.S. Health Center

Dear Ms. Kucera:

Approval is granted for you to gather survey data at the TWU C.A.R.E.S. Health Center. Approval through the Human Subjects Committee is not required if the survey is not of a sensitive nature.

Sincerely,

A handwritten signature in cursive script that reads "Jean Pyfer".

Jean Pyfer, Ph.D.
Chair
Human Subjects committee

APPENDIX M

Demographic Questionnaire for Pilot Study

COMPLETION AND RETURN OF THE SURVEY TO ME SHOWS YOUR WILLINGNESS AND PERMISSION TO PARTICIPATE IN THIS STUDY

Please complete the following statements. Do not sign your name.

Date, Month and Year in which you were born: _____

State in which you reside: _____

Birthplace: _____

Sex: _____ Male _____ Female

Do you have your own transportation? _____ YES _____ NO

Do you have Medicaid or Medicare? _____ YES _____ NO

Do you have a doctor that you see? _____ YES _____ NO

When was the last time you saw a doctor? _____

If you saw a doctor, what was it for? _____

Where did you see the doctor? _____ Emergency Room _____ Office

OCCUPATION

Are you employed outside the home? _____ YES _____ NO

If you are employed outside the home, what is your occupation or profession:

Are there any other wage earners in your household (spouse, roommate, parent, child, friend, etc.)? _____ YES _____ NO

If they are the primary wage earners of your household, what is their occupation?

EDUCATION

Please circle your highest level of education obtained.

Elementary/Junior High:

0 1 2 3 4 5 6 7 8

High School:

1 2 3 4

College:

1 2 3 4 5 or more

ETHNIC BACKGROUND

Please check the background that is most descriptive of you:

_____ White or Caucasian

_____ Black or Afro-American

_____ Hispanic

_____ Asian

_____ American Indian

_____ Other (specify) _____

MARITAL STATUS

_____ Single, never married

_____ Divorced or Separated

_____ Widowed

_____ Married

_____ Shared household, live-in partner (male or female)

_____ Other (specify) _____

FAMILY INCOME

Please check the category which best describes your annual income BEFORE TAXES.

- _____ Less than \$2,500
- _____ \$2,500 - \$4,999
- _____ \$5,000 - \$7,499
- _____ \$7,500 - \$9,999
- _____ \$10,000 - \$12,999
- _____ \$13,000 or more

APPENDIX N

Interview Debriefing Questionnaire

Please Read to Subject:

We want to make a health questionnaire that will help us to know your health needs better. We want to make a questionnaire that is easy to understand and to complete. You can help us do this by answering some questions about the questionnaires that you just completed.

To Be Asked of the Subject:

1. How did you feel about being a participant in the study?
2. What did you like about the questionnaires?
3. What did you dislike about the questionnaires?
4. Were you able to understand all the questions? YES NO
 - a. If no, which question or questions did you not understand?
 - b. What did you not understand about these questions?
5. Did you leave any of the questions blank? YES NO
 - a. If yes, what was the reason that you left the questions blank?
6. Did you find any of the questions confusing? YES NO
 - a. If yes, in what way were they confusing?
 - b. In what way could the questions have been stated so you could have understood them better?

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|-----|--|-----|----|
| 7. | Did you find the choices for answering the questions easy? | YES | NO |
| a. | If no, in what way could have the choices been made easier for you? | | |
| 8. | Did the questions describe what you think health is? | YES | NO |
| a. | If no, what was missing? | | |
| 9. | Did the questions include what <u>you</u> do to be healthy? | YES | NO |
| a. | If no, what was missing? | | |
| 10. | What else should be included in a questionnaire asking about health? | | |
| 11. | What do <u>you</u> think health is? | | |
| a. | What do you think the definition of health is? | | |
| b. | What health practices do you follow? | | |
| 12. | What other comments would you like to make about the questionnaires or about this study? | | |