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A comparison of health-promoting practices of Nevada rural and urban nurses

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Jacobs, Donna Nepper, M.S.N.

University of Nevada, Las Vegas, 1992

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A COMPARISON OF HEALTH-PROMOTING PRACTICES OF NEVADA RURAL AND URBAN NURSES

by

Donna Nepper Jacobs

A thesis submitted in partial fulfillment
of the requirements for the degree of

Master of Science

in

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Department of Nursing
University of Nevada, Las Vegas
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Approval Page

The thesis of Donna Nepper Jacobs for the degree of Master of Science in Nursing is approved.

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University of Nevada, Las Vegas
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TABLE OF CONTENTS

Chapter

APPENDICES

ABSTRACT

The purpose of this descriptive correlational study was to compare health-promoting lifestyle practices of rural and urban nurses in Nevada. Pender's Health Promotion Model provided the theoretical framework for this study. A total of 266 randomly sampled rural and urban nurses participated in completing two self-administered questionnaires, the Health-Promoting Lifestyle Profile and a biographical data sheet.

Eight research questions were answered in the study. Seven of the research questions sought to determine if significant differences existed between rural and urban nurses on the total Health-Promoting Lifestyle Profile (HPLP) and six subscales. No significant differences were identified between the two groups (HPLP, $t = -1.05$, $p = .294$; Self-actualization, $t = -1.30$, $p = .196$; Health Responsibility, $t = -.61$, $p = .539$; Exercise, $t = -.35$, $p = .725$; Nutrition, $t = -.92$, $p = .361$; Interpersonal Support, $t = -.32$, $p = .746$; Stress Management, $t = -1.00$, $p = .316$). The eighth research question sought to determine if there were significant relationships between health-promoting

lifestyle practices and select demographic variables of rural and urban nurses. Significant relationships were identified between age and years of nursing experience and the subscales of Health Responsibility, Nutrition and Stress Management for the rural group (r ranged from .179 to .257, $p < .05$). For the urban group, significant relationships were identified between age, years of nursing experience, hours worked per week and income and the HPLP, and subscales of Health Responsibility, Nutrition and Stress Management (r ranged from -.2356 to .3016, $p < .05$).

Findings from this study suggest that rural and urban nurses in Nevada engage in similar health-promoting lifestyle practices. Additional findings suggest that relationships exist between select demographic variables and health-promoting lifestyle practices of rural and urban nurses in Nevada.

LIST OF TABLES

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Chapter 1

INTRODUCTION

In the last decade the relationship between lifestyle practices and health has gained increased attention among health professionals, policy makers, and the public (Nemcek, 1986; Pender, 1987; U.S. Department of Health and Human Services, 1980, 1991). A healthy lifestyle has become increasingly more important as we continue to witness an increase in the national expenditure for healthcare costs. National healthcare costs consumed 12.2% of the gross national product reaching $666.2 billion in 1990, in comparison to 5% in 1960. Public programs funded 42.4% of these costs, the largest amount of any previous year. It is anticipated that by the year 2000, healthcare costs will account for 16.4% of the gross national product, or $1.6 trillion (Health Care Financing Administration, 1991). After examining these alarming statistics, it becomes dramatically clear why lifestyle practices have gained nationwide attention.

Growing evidence has suggested that lifestyle practices can influence an individual's health and longevity (Belloc, 1973; Belloc & Breslow, 1972;

Berkman & Breslow, 1983; Kaplan, Cassel & Gore, 1977; Reed, 1983). The Federal government's emphasis on health promotion and lifestyle practices was reflected in Healthy People 2000 (1991), a report published by the Department of Health and Human Services that focused on health promotion, health protection and preventive services for the nation. The report identified health promotion strategies that relate to individual lifestyle choices, including physical activity, fitness and nutrition.

Accepting personal responsibility for one's health in the form of positive behavioral practices is an essential step in the transformation to a health-promoting lifestyle. Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention (1979) identified lifestyle practices as strong determinants of health, morbidity and longevity. The central message of the Surgeon General's report conveyed that significant improvements in an individual's health can be attained through implementing personal health-promoting actions.

The nurse as a health care professional has the opportunity to serve as a resource and role model for

the public in promoting a healthy lifestyle. Nurses can contribute to health promotion through their frequent contacts with individuals, families, and communities. Possession of health promotion knowledge is not a guarantee that one will incorporate that knowledge into personal practice. In order for nurses to assist clients with the health-promoting lifestyle transformation, nurses need to be at their optimum health. Optimum health has been defined by Guzzetta and Dossey (1984) as a state of wellness consisting of a balance of the body-mind-spirit. An unwillingness to care for one's own health-promoting needs hinders the effectiveness of the nurse to serve as an advocate of health promotion and a role model for others.

Pender (1987) and Nemcek (1986) noted the scarcity of research on health promotion and health-promoting practices of nurses, as well as the healthy practices of the general well-adult population. In order to facilitate nursing's role in health promotion, further research is needed in evaluating nurses' health-promoting lifestyle practices.

Further research is also warranted in examining lifestyle practices of rural and urban populations.

Marotz-Baden (1988) and Marotz-Baden and Colvin (1986) reported a shortage of empirical research on comparisons of rural-urban lifestyles. Rural lifestyles have traditionally been depicted as less stressful with greater stability than the fast-paced, aggressive urban lifestyle, a portrayal lacking substantiation by empirical data.

The proportion of total population classified as rural has continued to decline throughout the century. Only one out of four people in the U.S. were classified as rural in 1984, in comparison to about 50 percent in 1920 (Cordes, 1989). Nevada, a state comprised of 109,895 square miles (Rand McNally, 1991), is unique in regard to its' population distribution, contrasting mountainous and desert terrain, major industries, land ownership and religious influence from the Mormon church.

The U.S. Census Bureau (1990) reported a total population of 1,201,833 in Nevada. In 1980,only 14.6 percent of the total population in Nevada resided in rural settings (U.S. Census Bureau, 1980) . This leaves a significant proportion of Nevadans residing in two predominate urban settings, Reno and Las Vegas. The

unusual population distribution can be partially attributed to the Federal government's ownership of approximately 85 percent of the land in Nevada (Hulse, 1981).

The relationship between Nevadans' lifestyle practices and the influential affects exerted by the inherent uniqueness of the state warrants examination. No studies were identified that compared rural-urban lifestyle practices in Nevada, an indication of a clear need for empirical research.

Purpose of the Study

The purpose of the study was to compare health-promoting lifestyle practices of rural and urban nurses in Nevada. The Health-Promoting Lifestyle Profile (HPLP) developed by Walker, Sechrist and Pender (1987) was utilized to describe the health-promoting lifestyle practices of rural and urban nurses. Pender's Health Promotion Model (1987) was utilized as the theoretical framework for the study. Determining lifestyle practices of nurses will assist the nursing profession in assessing their own health needs and identifying needed interventions, while broadening the existing health promotion research base.

Theoretical Framework

The Health Promotion Model is a theoretical framework developed by Pender (1982) and later modified by Pender (1987). This model was developed as a paradigm for health-promoting behavior and to complement existing health protection models. The focus of the model is on enhancing the individual's or group's well-being or health, rather than illness or disease prevention.

The Health Promotion Model originated from social learning theory (Bandura, 1977), and Becker's Health Belief Model (1974). Social learning theory emphasized that regulation of behavior occurred through cognitive mediating processes. Structurally, the model is similar to Becker's Health Belief Model (1974). Becker's Health Belief Model (1974) was utilized as a paradigm for health-protecting or preventive behavior, while Pender's Health Promotion Model (1987) was developed for examining health-promoting behavior.

The Health Promotion Model is comprised of three components: cognitive-perceptual factors (individual perceptions), modifying factors and variables affecting the likelihood of action (internal or external

activating cues). Pender's Health Promotion Model (1987) can be found in Appendix A.

Cognitive-perceptual factors serve as primary motivators for engaging in health-promoting behavior. Seven cognitive-perceptual factors are present in the model and include importance of health, perceived control of health, perceived self-efficacy, definition of health, perceived health status, perceived benefits of health-promoting behavior, and perceived barriers to health-promoting behavior. Participation in health-promoting actions is hypothesized to be directly influenced by each cognitive-perceptual factor (Pender, 1987).

Duffy (1988) tested health locus of control, self-esteem and health status of middle adulthood women using Pender's (1982) model. Self-esteem, current and future health status and internal health locus of control explained 36.3% of the variance of the Self-actualization, Interpersonal Support, and Exercise subscales of the Health-Promoting Lifestyle Profile (Walker, Sechrist & Pender, 1987). Prior health status, negative chance health locus of control, age and health worry/concern explained 36.5% of the variance of the

Health Responsibility, Nutrition and Stress Management subscales (Duffy, 1988). Approximately 73% of the variance remained unaccounted for, therefore the findings only partially supported the influential affect of cognitive-perceptual factors on health-promoting behavior.

Several investigators have found that importance of health or valuing health was related to health-promoting behaviors (Christiansen, 1981; Pender & Pender, 1986; Shephard & Cox, 1980; Wallston, Maides & Wallston, 1976). Weitzel (1989) evaluated importance of health, perceived locus of control, health status, and self-efficacy and found a correlation between each of the variables and health-promoting behavior. Self-efficacy was found to be the most powerful predictor of health-promoting behavior, with correlations between self-efficacy and Self-actualization subscale, $r = .42$, $p < .001$; self-efficacy and Interpersonal Support subscale, $r = .34$, $p < .001$; and self-efficacy and total Health-Promoting Lifestyle Profile, $r = .33$, $p < .001$. Alexy (1991) also found support for self-efficacy as a useful factor in distinguishing between participants

and nonparticipants in a worksite wellness program, $F(6,195) = 16$, $p < .0001$.

Perceived benefits of health-promoting behavior, perceived barriers to health-promoting behavior, and self-efficacy were evaluated by Kelly, Zyzanski, and Alemagno (1991) who found that perceived benefits and self-efficacy were the strongest predictors of positive lifestyle practices. High perceived benefits and low perceived barriers were found to be directly related to frequency of practicing breast self-examination, $R^2 = .27$, $p < .001$ (Rutledge, 1987).

Cognitive-perceptual factors are proposed to serve as primary motivators for engaging in health-promoting behavior. Additional research is needed to determine the extent to which each of the cognitive-perceptual factors influence health-promoting behavior and if these factors exert their influence singly or in a combined effort (Pender, 1987).

Modifying factors in the model consist of demographic characteristics (age, gender, race, education, income, religion, etc.) biological characteristics (weight, % body fat), interpersonal influences (significant others, health care

professionals and family trends in health care), situational factors (availability of and ease of access to health promotion resources), and behavioral factors (previous successful experiences engaging in health-promotion activities, i.e. stress management, nutritional meal preparation, exercise maintenance, etc.) Modifying factors are hypothesized to impact health-promoting behavior by their indirect influence on cognitive-perceptual factors (Pender, 1987).

Dishman, Sallis and Orenstein (1985) reviewed available research on determinants of inititating and maintaining physical exercise. Factors indicated as health-promoting determinants included demographic and biological characteristics, interpersonal influences, and situational and behavioral factors. These identified factors are consistent with the modifying factors in Pender's model (1987).

In a study by Pender and Pender (1986), interpersonal influences, weight and attitudes contributed to explaining intentions to engage in health-promoting activities (regular exercise), $R = .364$, $p < .01$; while weight, attitudes and perceived health status contributed to explaining intentions to

engage in health-promoting activities (eating a weight-control diet), $R = .428$, $p < .001$. Zimmerman and Connor (1989) also found support for interpersonal influences exerting a positive affect on health behavior, with family members exerting the most influence followed by friends and coworkers.

Duffy (1988) evaluated demographic characteristics of age, race, household income, education, marital status, employment and number of persons in the household and found support only for age and education influencing health-promoting behavior. Subjects who were older in age scored higher on the Health Responsibility, Nutrition and Stress Management subscales of the Health-Promoting Lifestyle Profile (HPLP). A stepwise multiple regression analysis was performed, resulting in 25% of the variance in the total HPLP score being explained by five cognitive-perceptual variables and one modifying (demographic) variable, post high-school education. Duffy contributed the lack of correlation between demographic variables and health-promoting behaviors to the study's homogeneous sample. In contrast, Christiansen (1981), Kulbok (1985), Hanner (1986), and

Weitzel (1989) found support for demographic characteristics of education, income, age and gender influencing health-promoting behavior.

Weitzel (1989) reported correlations between demographic characteristics of age, gender and education and the Health-Promoting Lifestyle Profile (HPLP), subscale and total scale scores. Correlations ranged from $r = .32$, $p < .001$, to $r = .13$, $p < .05$. The strongest correlation occurred between age and the HPLP subscale, Nutrition, $r = .32$, $p < .001$, although no mention of the specific relationship between age and nutrition was given.

Hanner's (1986) findings supported a predictive, health-promotive relationship between education and income and total score on the HPLP, $r = .116$, $p < .05$; $r = .131$, $p < .05$, respectively. A weak, yet positive relationship between level of education and monthly income and a health-promotive lifestyle was demonstrated.

Kulbok (1985) performed regression analysis of five preventive health behaviors on education and income and found that higher education consistently predicted each of the preventive health behaviors.

Correlations ranged from $r = -.03$ to .30, $p < .05$.

Situational factors described by Pender (1987) include availability of health-promoting resources and ease of accessibility to these resources or similar alternatives. These factors become significant when evaluating the variety of environments in which individuals live and work.

Modifying factors in the model are proposed to impact health-promoting behavior by their indirect influence on cognitive-perceptual factors. Additional research is needed to determine if interrelationships exist between specific modifying factors and cognitive-perceptual factors, respectively. Further research is also warranted to determine if specific populations experience an increased association with select modifying factors.

The final component of the model consists of variables affecting the likelihood of action or activating cues. These activating cues can be internal or external and are hypothesized to influence one's motivation for engaging in health-promoting activities. The required intensity of the cues to stimulate health-promoting action varies, but it is believed to

be related to the individual or group's level of readiness to engage in health-promoting activities (Pender, 1987).

Pender's Health Promotion Model (1987) serves as a paradigm for health-promoting behavior. The focus of the Health Promotion Model is "on movement toward a positively valenced state of enhanced health and well-being" (Pender, 1987, p. 57), rather than illness and disease prevention. Pender characterizes health-promoting behaviors as continuous activities incorporated into an individual's daily routines; a means for attaining self-actualization, and a representation of an individual interacting with the environment to enhance the level of health, rather than simply responding to the environment.

Pender's Health Promotion Model (1987) was utilized as the theoretical framework for the study due to the model's emphasis on health-promoting behaviors. Select modifying factors in the Health Promotion Model, behavioral factors, interpersonal influences and demographic factors were examined in relationship to health-promoting lifestyle practices of rural and urban nurses in Nevada.

The Health-Promoting Lifestyle Profile (Walker, Sechrist & Pender, 1987) and a demographic instrument developed by the investigator were utilized in the study (Appendix C). Walker, Sechrist and Pender (1987) maintain that the Health-Promoting Lifestyle Profile has sufficient validity and reliability to be used by researchers to "describe the health-promoting component of lifestyle in various populations, to explore correlates or determinants of health-promoting lifestyle, or to measure changes in health-promoting lifestyle as a result of interventions" (p. 80).

Research Questions

1. Is there a statistically significant difference between Nevada rural and urban nurses' scores on the total Health-Promoting Lifestyle Profile?

2. Is there a statistically significant difference between Nevada rural and urban nurses' scores on the Self-actualization subscale of the Health-Promoting Lifestyle Profile?

3. Is there a statistically significant difference between Nevada rural and urban nurses' scores on the Health Responsibility subscale of the Health-Promoting Lifestyle Profile?

4. Is there a statistically significant difference between Nevada rural and urban nurses' scores on the Exercise subscale of the Health-Promoting Lifestyle Profile?

5. Is there a statistically significant difference between Nevada rural and urban nurses' scores on the Nutrition subscale of the Health-Promoting Lifestyle Profile?

6. Is there a statistically significant difference between Nevada rural and urban nurses' scores on the Interpersonal Support subscale of the Health-Promoting Lifestyle Profile?

7. Is there a statistically significant difference between Nevada rural and urban nurses' scores on the Stress Management subscale of the Health-Promoting Lifestyle Profile?

8. Is there a statistically significant relationship between health-promoting lifestyle practices and age, gender, race, marital status, level of education, practice setting, average hours worked per week, number of years of nursing experience, annual household income and religious affiliation of Nevada rural and urban nurses?

Definition of Terms

Nurse. A licensed, practicing, registered nurse in the State of Nevada who voluntarily participated in this study.

Urban Setting. A Nevada city with a population greater than 50,000 residents in which a nurse resides and practices (U.S. Census Bureau, 1990).

Rural Setting. A Nevada city or town with a population of less than 50,000 residents in which a nurse resides and practices (U.S. Census Bureau, 1990).

Health Promotion. "Activities directed toward increasing the level of well being and actualizing the health potential of individuals, families, communities and society" (Pender, 1987, p. 4).

Health-Promoting Lifestyle. " A multidimensional pattern of self-initiated actions and perceptions that serve to maintain or enhance the level of wellness, self-actualization, and fulfillment of the individual" (Walker, Sechrist & Pender, 1987, p. 77).
Health-promoting lifestyle will be measured by the Health-Promoting Lifestyle Profile subscale and total scale scores (Walker, Sechrist & Pender, 1987).

Self-Actualization. "Having a sense of purpose,

seeking personal development, and experiencing self-awareness and satisfaction" (Walker, Volkan, Sechrist & Pender, 1988, p. 80). Self-actualization will be measured by the Health-Promoting Lifestyle Profiles Self-actualization subscale score.

Health Responsibility. Health responsibility is defined as assuming self-responsibility for one's health, acquiring health education information and accessing health care professionals as necessary (Walker, Volkan, Sechrist & Pender, 1988). Health responsibility will be measured by the Health-Promoting Lifestyle Profile Health Responsibility subscale score.

Exercise. Exercise is defined as participation in a regular exercise routine (Walker, Volkan, Sechrist & Pender, 1988). The frequency and type of exercise will be measured by the Health-Promoting Lifestyle Profile Exercise subscale score.

Nutrition. Nutrition is defined as the development of meal plans and selection of foods (Walker, Volkan, Sechrist & Pender, 1988). Eating patterns and food selection will be measured by the Health-Promoting Lifestyle Profile Nutrition subscale score.

Interpersonal Support. Interpersonal support is defined as the development and maintenance of relationships which foster intimacy and friendship (Walker, Volkan, Sechrist & Pender, 1988). Interpersonal support will be measured by the Health-Promoting Lifestyle Profile Interpersonal Support subscale score.

Stress Management. Stress management is defined as the recognition of personal stressors, learning ways to control stressors, and the practice of relaxation techniques (Walker, Volkan, Sechrist & Pender, 1988). Stress management will be measured by the Health-Promoting Lifestyle Profile Stress Management subscale score.

Wellness. "A unique, positive, integrated lifestyle approach encompassing the dimensions of self-responsibility, self-awareness, physical fitness, nutritional awareness, stress management and environmental sensitivity" (Ardell, 1979, p. 17).

Significance of the Study

The study will examine health-promoting lifestyle practices of rural and urban nurses utilizing a health promotion model. Numerous studies which examine health

behaviors are present in the literature, yet few have evaluated health promotion activities utilizing a health promotion framework. Of the studies that incorporated a health promotion framework, relatively few focused on health-promoting practices of nurses (Nemcek, 1986).

If nurses are to play an active role in health promotion of their clients, they need to be aware of their own lifestyle behaviors. An absence of health-promoting behaviors in nurses will hinder nursing's ability to promote healthy lifestyle practices in their clients (Moll, 1982).

The study will benefit nursing by identifying the existence or absence of health-promoting practices in a sample of rural and urban nurses in Nevada. Knowledge gained from this study will enable the Nevada nursing profession to begin to examine, through subsequent research studies, possible causes for the presence or absence of health-promoting practices and initiate specific health-promoting interventions. Interventions would also be directed at further strengthening existing health-promoting practices.

Limitations of the Study

The study was limited to registered nurses living and practicing in Nevada. A total of 600 Nevada nurses, 300 rural and 300 urban were randomly sampled for participation in the study. The nurses who choose to respond to the mailed questionnaire may differ in their health-promoting practices from those who elect not to participate.

Nevada is unique in relation to the state's population distribution, contrasting desert and mountainous terrain, gaming influence, and prevalence of Latter-Day Saints (Mormon) religion and culture. The Mormon culture's emphasis on a "wholesome lifestyle" and avoidance of deleterious lifestyle practices has the potential to inluence the findings. Due to the uniqueness of Nevada, the results of this study can only be generalized to nurses practicing in the State of Nevada.

Chapter 2

REVIEW OF RELATED LITERATURE

Health Promotion

The health care profession has been instrumental in refining the concept of health promotion over the past two decades. Research examining healthy lifestyle practices has emerged from the use of models focusing on illness avoidance, disease prevention, and health protection behaviors to one that incorporates a health promotion framework (Nemcek, 1986; Pender, 1987; Reynolds, 1988; Walker, Volkan, Sechrist & Pender, 1988).

The Health Promotion Model was developed from studies of health promotion and wellness behavior and was intended to complement existing health protection/illness prevention models (Pender, 1987). Health protection/illness prevention models focused on avoidance and risk reduction behaviors, while Pender's Health Promotion Model (1987) focused on well being and self-actualization behaviors.

Health Promotion Definitions

The growth and refinement of the health promotion concept has resulted in a commonality of health

promotion definitions. Pender (1987) defined health promotion as "activities directed toward increasing the level of well being and actualizing the health potential of individuals, families, communities, and society" (p. 4). In Edelman and Mandle (1990, p. 10), O'Donnell defined health promotion as "the science and art of helping people change their lifestyle to move toward a state of optimal health". Higgins' (1988) definition of health promotion incorporated primary and secondary prevention. Health promotion was defined as "activities and experiences which favorably influence attitudes, knowledge, and behavior relating to the individual, family, and community's health" (Higgins, 1988, p. 39). Brubaker (1983) described health promotion as "health care directed toward high-level wellness through processes that encourage alteration of personal habits or the environment in which people live" (p. 12). Duffy (1989) described health-promoting activities as "an expression of the individual's actualizing tendencies. They focus on maintaining or improving a person's sense of well-being..." (p. 50).

Health Promotion and Wellness

Inherent in the health promotion concept is the

concept of high-level wellness. Ardell (1979) described high-level wellness as " a positive, integrated, unique lifestyle approach to enhancing well being" (p. 17). Health promotion and high-level wellness can be considered to be analogous concepts due to their emphasis on behaviors reflective of health-enhancement and self-actualization.

A wellness system format developed by Dunn (1973) consisting of individual, family, community, environmental, and societal wellness was utilized by Pender for examining health promotion efforts (Pender, 1987). The wellness format reflected the multidimensional nature of health promotion and the need for attention at each system level. Of particular importance to health promotion is the system of societal wellness. "Societal wellness provides the framework in which individual, family, community, and environmental wellness can exist" (Pender, 1987, p. 9). The improvement of societal wellness is directly influenced by federal, state, and local health care policies.

Health Promotion and the Federal Government

The nation has observed a growing interest in

health promotion by the Federal government during the last decade. Increased governmental attention concerning the nation's health status has resulted in the creation of health goals and objectives for the nation. A pivotal government report, Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention (1979), identified the relationship between lifestyle practices and health, morbidity, and longevity. This document contained a set of broad national goals proposed for improving the nation's health during each stage of the lifespan. Completion of these goals was targeted for the year 1990. A subsequent report from the Department of Health and Human Services, Promoting Health/Preventing Disease: Objectives for the Nation (1980), focused on three major areas: health promotion, health protection, and preventive health services. These two government documents were instrumental in focusing the nation's attention on the relationship between lifestyle practices and health promotion. The government's continued interest in the relationship between lifestyle practices and health promotion was reflected in Healthy People 2000 (1991), a momentous report

identifying health promotion strategies in relation to individual lifestyle choices.

Correlates of Health Promotion

Recent health care research has focused attention on the relationship between lifestyle practices and health promotion (Brown, Muhlenkamp, Fox & Osborn, 1983; Duffy, 1988; Hanner, 1986; Muhlenkamp & Sayles, 1986; Pender, 1987; Walker, Volkan, Sechrist & Pender, 1988). An understanding of the importance of an individual's interactions with family, community, society, and the environment is necessary in order to gain a clearer understanding of health promotion.

The significance of interpersonal support in implementing positive behavior changes was examined by Zimmerman and Connor (1989). Two areas that received the greatest benefit from family member support included exercise and fat consumption, $t\ (83) = 4.61$, $p < .001$; $t\ (83) = 1.98$, $p = .052$, respectively. The greatest amount of interpersonal support resulted from family members, followed by friends and coworkers. From the three categories of interpersonal support, the greatest influence resulted from the category of overall supportiveness, followed by the categories of

encouragement of maintenance of positive lifestyle changes, and others' health habit change.

Availability of worksite health promotion programs on individuals' intent to participate, as well as on actual participation and nonparticipation, has provided additional insight into health promotion behaviors. Intent to participate in a worksite health promotion program was examined by Zavela, Davis, Cottrell, and Smith (1988). Intenders and nonintenders reported similar health status profiles, positive lifestyle behaviors including exercise, nutritional intake, dental hygiene and hours of sleep and preventive health practices including use of seat belts and frequency of physical and dental examinations (p .05). Program intenders were primarily younger females with a mean age of 39.54 (SD = 9.62), in clerical and administrative positions (63%), with lower family incomes.

Alexy (1991) examined actual participation or nonparticipation in a worksite health promotion program. Participants tended to be younger with a mean age of 44, and more educated than nonparticipants whose mean age was 51. Discriminant analysis revealed that

self-efficacy, a cognitive-perceptual factor in Pender's Health Promotion Model (1987), was the most useful factor in identifying differences between the two groups, $F(6,195) = 16$, $p < .0001$. Deterrants to regular physical activity identified by nonparticipants included age, perceived lack of fitness, perceived poorer health status, family commitments, distance from work, shift work, and working overtime. Implications for further worksite health promotion research included addressing health promotion needs of middle-aged and older workers, workers with actual or perceived health problems, and blue collar workers.

Hanner (1986) studied factors related to the promotion of health-seeking behaviors of 243 non-institutionalized adults over the age of sixty. Self-esteem, perceived health status, age, sex, education, and income were examined in relation to a health-promotive lifestyle. Age and sex were the only variables that were not predictive of a health-promotive lifestyle; self-esteem was the single best predictor, $r = .41$. Support for self-esteem as an influential factor in health promotion practices was also demonstrated by Rutledge (1987) and Hallal (1982).

Rutledge (1987) reported a positive relationship between self-esteem and frequency of breast self-examination, $r = .236$, $p = .015$. Hallal (1982) reported a positive relationship between self-esteem and breast self-examination, $r = .347$, $p = .01$; and perceptions of health beliefs (perceived susceptibility and perceived benefits) and breast self-examination, $r = .149$, $p = .05$; $r = .286$, $p = .01$, respectively.

Self-esteem, social support and positive health practices were examined by Muhlenkamp and Sayles (1986). Self-esteem and social support were found to exert a positive influence on health practices, $r = .25$, $p < .01$; $r = .26$, $p < .01$, respectively, with social support exerting its influence indirectly through self-esteem. A correlation was found between social support and self-esteem, $r = .52$, $p < .0001$. This finding supports the indirect influence of modifying factors on cognitive-perceptual factors as proposed in Pender's model (1987).

Brown, Muhlenkamp, Fox, and Osborn (1983) examined the relationship between health locus of control, health values and health promotion activities of 63 healthy, middle-class adults from a southwestern

metropolitan area. No significant relationships were found between income, education, or age and the Multidimensional Health Locus of Control (MHLC) subscales and health value. Married women were found to engage in more health-promoting activities than all the other subjects ($t = 2.09$, $df - 33$, $p < .04$). MHLC subscale scores accounted for approximately 20% of the variance in the health promotion activities. Health value was not found to be significantly related to any of the variables; a finding consistent with research by Muhlenkamp, Brown and Sands (1985), Laffrey and Isenberg (1983), and Weitzel (1989).

Walker, Volkan, Sechrist, and Pender (1988) in a study of correlates and patterns of health-promoting lifestyles, compared older adults with middle-aged and young adults utilizing the Health-Promoting Lifestyle Profile (HPLP). A series of one-way analyses of variance ($p < .001$) revealed significant age group differences on three of the six HPLP subscales: older adults scored higher on Health Responsibility, Nutrition, and Stress Management. Means for older adults, middle adults and younger adults = 2.50, 2.27, 2.00 for Health Responsibility; 3.04, 2.70, 2.59 for

Nutrition; 2.73, 2.47, 2.47 for Stress Management, respectively. No significant age group differences were found for the remaining three HPLP subscales: Self-actualization, Exercise, and Interpersonal Support. Mean subscale scores for all age groups were highest in Self-actualization and Interpersonal Support, and lowest in Exercise. Exercise requires the greatest expenditure of energy in comparison to the remaining lifestyle practices measured by the HPLP, therefore, it was not surprising that the Exercise subscale received the lowest mean score. This finding was consistent with Sennott-Miller and Miller's (1986) research examining the factor of difficulty in health-promoting practices. They found that perceived difficulty of an activity was a more influential factor in the likelihood of initiating risk-reducing or weight-reduction activities than was the perceived effectiveness of the activities, Likelihood = 19.9 $(\text{Effectiveness}^{.16})$ $(\text{Difficulty}^{-.50})$, $R^2 = .92$ (Sennott-Miller & Miller, 1986). These findings lend support to the inclusion of two cognitive-perceptual factors in Pender's Health Promotion Model (1987): perceived benefits of health-promoting behaviors and

perceived barriers to health-promoting behaviors.

Duffy (1989) examined the relationships among self-esteem, health locus of control, health status, and health promotion activities in 420 employed women. Internal and negative chance health locus of control, Self-actualization, negative Health Responsibility and Exercise accounted for 15.4% of the variance in the total health status score. An additional 17.3% of variance in the total health status score was accounted for by household income and presence of a diagnosed health problem. The findings indicate that of the variables examined, household income and presence of a diagnosed health problem provided the greatest contribution to explaining health status. Similar findings were presented by Duffy (1988) where health locus of control, self-esteem and health status were analyzed for their impact on health-promoting lifestyle activities in 262 women. Internal and chance health locus of control, self-esteem, current health status, health worry/concern and high-school education accounted for 25% of the variance in the total health promotion score, $p < .01$ to $p < .001$.

Pender, Walker, Sechrist, and Frank-Stromborg

(1990) evaluated importance of health, perceived control of health, perceived personal competence, perceived health status and definition of health, along with demographic variables of age, gender, marital status, education, income and ethnic/racial background for their ability to explain and predict health-promoting lifestyles. A hierarchical multiple regression analysis was performed to determine which variables contributed to the explanation of health-promoting lifestyle. Perceived personal competence, perceived health status, perceived control of health and definition of health accounted for 31% of the variance in health-promoting lifestyle, $p < .05$ for each variable. Two demographic variables, age ($r = .126$, $p = .014$) and gender ($r = .148$, $p < .001$) contributed to the explanation of health-promoting lifestyle; participants who were older and female reported healthier lifestyles. These findings lend support to Pender's Health Promotion Model (1987).

Further testing of cognitive-perceptual factors in Pender's Health Promotion Model (1987) was performed by Weitzel (1989). Importance of health, perceived health status, perceived control of health and perceived

self-efficacy were evaluated for their ability to predict health-promoting behaviors in 179 blue collar workers. Pearson product moment correlations of greatest significance were between self-efficacy and total Health Promoting-Lifestyle Profile (HPLP) scores, $r = .33$, $p < .001$, Self-actualization subscale, $r = .42$, $p < .001$, and Interpersonal Support subscale, $r = .34$, $p < .001$, respectively, and between health status and total HPLP scores, $r = .34$, $p < .001$, and Exercise subscale, $r = .32$, $p < .001$, respectively. The most variance explained by any of the analyses was 28%, a finding which provided partial support for the model, yet inferred a deficiency of the model to fully explain health-promoting behaviors.

Health Promotion and Nursing

Nemcek (1986) noted the scarcity of nursing research on health promotion of well adults. In a review of nursing research from 1970 to 1985 on health promotion activities of well adults, 25 studies were reported, with only two focusing on nursing's health-promoting practices (Nemcek, 1986). Since then, only a paucity of articles addressed health-promoting practices of nurses and those reflected inconsistent

findings (Boyd, 1988; Dalton & Swenson, 1983; David, 1991; Feldman & Richard, 1986; Guzzetta & Dossey, 1984; Moll, 1982; Sacker, 1990; Salovey, Rudy & Turk, 1987; Selby, 1991).

Dalton and Swenson (1983) randomly studied smoking behavior of 601 North Carolina nurses and found that 31.9% were current smokers. Feldman and Richard (1986) randomly surveyed 823 Minnesota nurses and found that 24.3% were current smokers, 18% were former smokers, and 57.7% never smoked. A reduction in the percentage of smokers in the Minnesota study was encouraging, but caution must be exercised in generalizing the findings nationwide. Sacker (1990) surveyed 71 nurses and 42 midwives in a study on smoking behaviors of female health care workers in London, England. Of the 113 study participants, 31% were current smokers. Comparing the two groups revealed statistically significant findings: 31 out of 71 nurses were current smokers in comparison to 4 out of 42 midwives, Chi-square = 14.385, $p < .001$, two-tailed. The percentage of nurse smokers found in this study reflects similar findings by Dalton and Swenson (1983).

Salovey, Rudy, and Turk (1987) compared attitudes

and performance of health protective behaviors of registered nurses with college students and school teachers. Health protective behaviors consisted of safety practices, weight control, rest and relaxation, and medical avoidance. Health-protective behaviors were viewed by nurses as more important for maintenance of good health than by the student/teacher group. Nurses also reported performing 32% more health-protecting behaviors than the student/teacher group (Salovey, Rudy & Turk, 1987). The findings need to be considered in light of the focus on health protection rather than on health promotion behaviors. Health protection has been described as avoidance and prevention behavior, in contrast to health promotion's emphasis on enhancing self-actualization and increasing the level of well being (Pender, 1987).

Boyd (1988) evaluated the effects of baccalaureate nursing education on personal health behaviors of 33 nursing students. A wellness class which included strategies for changing personal health behaviors was included in the nursing program. Students were evaluated at intermittent periods during their college education and compared with a control group of

non-nursing students. Of the 11 dimensions of wellness measured by the Wellness Inventory, nursing students significantly improved in 8 of the dimensions, in comparison to significant improvements in 2 of 11 dimensions for non-nursing students (Boyd, 1988).

Nursing has been described as an inherently stressful profession, with nurses delivering unselfish service to others while ignoring their own needs (Clark, 1991; Cohen & Jaffe in Edelman and Mandle, 1990; David, 1991; Guzzetta & Dossey, 1984; Hartl, 1979). The inability to care for one's own needs has left doubts about nursing's ability to serve as a role model for others. Moll (1982) attributed nursing's lack of success in promoting high-level wellness in clients to the lack of high-level wellness in nurses. Wellness is a combination of body-mind-spirit, a concept lacking in the nursing profession (Guzzetta & Dossey, 1984; Moll, 1982). Adjusting nursing's lifestyle to include increased self-awareness, understanding of personal values, and an acceptance of personal responsibility would facilitate attainment of high-level wellness in the nurse and client (Moll, 1982). Due to the scarcity of health promotion research on nursing lifestyles and

inconsistencies in the literature, further research is warranted to assess nursing's lifestyle practices.

Rural and Urban Lifestyles

Rural life, even though frequently associated with farming, encompasses a multitude of other occupations including mining, forestry, conservation, fishing, ranching, law enforcement, and health care (Olson & Schellenberg, 1986). Rural life has traditionally been depicted as being slower-paced, with greater social networks and less stressors than urban life. The idyllic rural lifestyle traditionally portrayed lacks substantiation by empirical data. The financial crisis experienced by the nation's farming industry during the last decade has gradually altered the tranquil stereotype associated with rural living. The extent to which rural and urban workers share common stressors, as well as occupation-specific stressors remains unknown and warrants further study.

A shortage of empirical research on comparisons of rural-urban lifestyles has been reported (Marotz-Baden, 1988; Marotz-Baden & Colvin, 1986). A comparison study was conducted by Marotz-Baden (1988) to determine if urban and rural families experience different amounts

and types of stressors. Urban couples had significantly higher mean scores on the Total Recent and Past Family Life Changes than rural couples, demonstrating that urban couples experienced greater past and recent stressors. Analysis of types of stressors revealed that urban couples reported significantly more work-family, marital, and pregnancy stressors; rural couples reported significantly greater fluctuations in their financial status, resulting in higher economic stressors (Marotz-Baden, 1988).

Marotz-Baden and Colvin (1986) examined coping strategies of rural and urban couples and reported that both groups utilized the same coping strategies. Rural couples reported utilizing the coping strategies more frequently even though confronted with fewer stressors, indicating a greater ability to cope with stressors.

Role overload in farm women has been reported by Walker and Walker (1987) as a major source of stress for women in a rural setting. Married women who work outside the home are confronted with fulfilling multiple roles and therefore, are at increased risk for role overload regardless of the site of residence. Role overload in rural and urban settings is a concept that

warrants further research.

Due to the lack of empirical data on rural lifestyles, the majority of information that is available on health patterns and behaviors has been derived from clinical intuition and stereotype (Lee, 1991; Melton, 1983). Research addressing rural-urban lifestyle comparisons and health-promoting practices of specific subgroups within the rural and urban settings is of paramount importance to the understanding of health behaviors and lifestyle practices. The need for further research has been clearly demonstrated. The opportunity has never been better for nursing to take the initiative and address these health-related research needs.

Chapter 3

METHODOLOGY

The purpose of this study was to compare health-promoting lifestyle practices of rural and urban nurses in Nevada. The research questions sought to determine if significant differences existed between rural and urban nurses on select demographic variables and total Health-Promoting Lifestyle Profile and subscale scores (Walker, Sechrist & Pender, 1987).

Design

To determine if rural and urban nurses in Nevada differed in health-promoting lifestyle practices, a descriptive correlational survey design was used. A mailed survey format was selected since it was conducive to randomization and allowed the investigator greater accessibility to the target population.

Sample

The accessible population consisted of all nurses currently licensed as registered nurses by the Nevada State Board of Nursing. A total of 600 nurses, 300 rural and 300 urban were randomly sampled from a list

provided by the Board of Nursing. The sample size of 600 nurses was selected with the goal of obtaining a minimum of 100 rural and 100 urban respondents. Randomly selected rural and urban zip codes were submitted to the State Board of Nursing to facilitate obtaining the mailing labels for the 600 questionnaires.

In order to protect human subjects' rights, a Human Subjects' Rights Protocol Form was submitted to the Department of Nursing Human Subjects' Rights Committee for approval. Following the Nursing Committee's approval, the Human Subjects' Rights Protocol Form was submitted to the Social Behavioral Subcommittee of the Institutional Review Board, University of Nevada, Las Vegas for final approval prior to initiation of the research. Approval was granted on August 10, 1992 (see Appendix B).

Each study participant received a cover letter/consent form (see Appendix C). Participation was voluntary, anonymity of the respondent was maintained. Participant consent in this study consisted of completion and return of the questionnaire to the investigator.

Data Collection

Two self-administered instruments were utilized for data collection, requiring approximately fifteen minutes of the participant's time for completion. A 16-item biographical questionnaire developed by the investigator was used to obtain demographic information (see Appendix D). Data on age, gender, race, marital status, educational level, practice setting and years at current practice setting, hours worked per week, years of nursing experience, years at current residence, religious affiliation and frequency of church attendance were collected and analyzed to compare the demographics of the rural versus urban respondents and examine the relationships between demographic variables and lifestyle practices. The Health-Promoting Lifestyle Profile (Walker, Sechrist & Pender, 1987) was used to assess health-promoting lifestyle practices of rural and urban nurses (see Appendix D). Permission to use this instrument was granted by Dr. Susan Noble Walker prior to the initiation of this investigation (see Appendix E).

A cover letter/consent form, Health-Promoting Lifestyle Profile, biographical questionnaire and a

self-addressed, stamped return envelope were mailed to each participant by the investigator. Separate-colored questionnaires for rural and urban groups were used to expedite sorting returned questionnaires and calculating the return rate for each group. Postcards were mailed to each participant ten days following the initial mailing of the questionnaires as a followup to the study in an effort to enhance return of the questionnaires.

Tools

A 16-item biographical questionnaire was developed by the investigator to obtain selected demographic data. To insure clarity and assess for ease of completion, the questionnaire was pre-tested using three expert nurses with similar characteristics of the sample group. The biographical data were used to assist in assessing similarities and differences between the rural and urban sample groups on key variables and to examine relationships between demographic data and lifestyle practices as measured by the Health-Promoting Lifestyle Profile, total scale and subscales.

The Health-Promoting Lifestyle Profile, a 48-item instrument was developed by Walker, Sechrist and Pender

(1985). The instrument contains six subscales: Self-actualization (13 items), Health Responsibility, (10 items), Exercise (5 items), Nutrition (6 items), Interpersonal Support (7 items) and Stress Management (7 items). A summated rating was used for obtaining subscale and total scale scores. A modified four-point response format was used, never = 0, sometimes = 1, often = 2, and routinely = 3. The range of the instrument's summated scores for the Health-Promoting Lifestyle Profile (HPLP) total scale was 0 to 144. The subscales ranges were Self-actualization 0 to 39, Health Responsibility 0 to 30, Exercise 0 to 15, Nutrition 0 to 18, Interpersonal Support 0 to 21, and Stress Management 0 to 21. To faciliate comparisons of scores across the subscales, Walker, Sechrist and Pender (1985) recommended the use of means rather than summated subscale scores.

The development of the Health-Promoting Lifestyle Profile has undergone several stages of testing. The pilot form of the instrument was evaluated using a convenience sample of 173 graduate and senior undergraduate nursing students. Following the pilot study, the original 107-item Health Promoting Lifestyle

Profile (Walker, Sechrist and Pender, 1987) was evaluated using 952 adults from midwestern communities. Item analysis and factor analysis were performed during the instrument's original testing for establishment of reliability and validity. Following item analysis, 37 items were eliminated. The majority of the 70 remaining items had item-total correlations of .25 or higher, while inter-item correlations ranged from -.098 to .651. Factor analysis was performed on the remaining 70 items. This analysis resulted in the deletion of an additional 22 items. From the factor analysis, six subscales were formed. The six subscales accounted for 47.1% of the variance. Second-order factor analysis was performed with health-promoting lifestyle occurring as the single factor. All six of the first-order factors loaded significantly on the second-order factor. Internal consistency was demonstrated with Cronbach's alpha coefficients for subscales ranging from .70 to .90, and .92 for the total scale. Test-retest on a sample of 63 adults at an interval of two weeks was done to determine stability. Pearson r correlations ranged from .81 to .91 for the subscales, and .93 for the total scale. The authors maintain that the

instrument possesses sufficient reliability and validity to be used by researchers to describe health-promoting lifestyles in various populations, for exploring determinants of health-promoting practices, and for measuring health-promoting lifestyle changes following interventions. The authors acknowledged that additional development and evaluation of the instrument was warranted. Cronbach's alpha coefficients for the Health-Promoting Lifestyle Profile, total scale and subscales were calculated to determine internal consistency of the instrument for the sample in this study.

Statistical Analyses

The Statistical Package for Social Sciences (SPSS), Release 4.0 was used for data analyses. Descriptive statistics were used to analyze the demographic data and describe the characteristics of the sample. Due to the small number of male respondents, gender was examined separately using frequency distributions to determine if significant differences were noted on the Health-Promoting Lifestyle Profile and demographic characteristics.

The null hypotheses related to the eight research

hypotheses were tested using independent T-tests and Pearson Product Moment Correlations. The probability level for all hypothesis testing was set at .05 for statistical significance.

Multivariate analysis of variance (MANOVA) was utilized to compare the difference between the rural and urban groups on the mean subscale scores of the Health-Promoting Lifestyle Profile. Chi-Square was used to investigate the relationship between the nominal level demographic variables for the rural and urban groups. The demographic variables included gender, race, marital status, practice setting and religion.

Chapter 4

FINDINGS AND DISCUSSION

Description of the Sample

The sample population consisted of 600 registered nurses in Nevada, 300 rural nurses and 300 urban nurses selected at random from the accessible population of over 8,200 registered nurses licensed by the Nevada State Board of Nursing. The data collection occurred from August to October, 1992. A total of 266 completed questionnaires were returned to the investigator for a 44.3% return rate. The completed questionnaires were separated into two groups, rural respondents (140) for a 46.7% return rate and urban respondents (126) for a 42% return rate.

The frequency distributions for the demographic variables of age, gender, race, marital status, education, nursing experience, income, religion, and religious attendance for the sample are presented in Tables 1 to 6. The rural group ranged in age from 22 years to 72 years with a mean age of 41.56 years. Forty-five percent of the group ranged between 33 to 43 years of age. The urban group ranged in age from 26 years to 73 years with a mean age of 46.44 years. Only

Table 1

Frequency Distributions for Rural Group (n = 140) and Urban Group (n = 126) by Age and Gender

Age in Years	Rural		Urban	
	Frequency	Percent	Frequency	Percent
22 to 32	23	16.4	11	8.7
33 to 43	63	45.0	43	34.2
44 to 54	38	27.1	44	34.9
55 to 65	14	10.0	21	16.6
66+	1	0.7	7	5.6
Missing	1	0.7	0	0.0
	140	100.0	126	100.0

Gender	Rural		Urban	
	Frequency	Percent	Frequency	Percent
Female	136	97.1	117	92.9
Male	4	2.9	9	7.1
Total	140	100.0	126	100.0

Table 2

Frequency Distributions for Rural Group (n = 140) and Urban Group (n = 126) by Race

	Rural		Urban	
Race	Frequency	Percent	Frequency	Percent
Caucasian	135	96.4	116	92.1
Hispanic	3	2.1	0	0
Black	0	0	7	5.6
Asian	1	0.7	0	0
Other	0	0	1	0.8
Missing	1	0.7	2	1.8
Total	140	100.0	126	100.0

Table 3

Frequency Distributions for Rural Group (n = 140) and Urban Group (n = 126) by Marital Status

Marital Status	Rural		Urban	
	Frequency	Percent	Frequency	Percent
Single	6	4.3	11	8.7
Married	114	81.4	71	56.3
Divorced	12	8.6	37	29.4
Widowed	6	4.3	6	4.8
Separated	2	1.4	1	0.8
Total	140	100.0	126	100.0

Table 4

Frequency Distributions for Rural Group (n = 140) and Urban Group (n = 126) by Education and Years of Nursing Experience

	Rural		Urban	
Education	Frequency	Percent	Frequency	Percent
ADN	61	43.6	31	24.6
Diploma	24	17.1	32	25.4
BSN/BS	44	31.4	45	35.7
MSN/MS	10	7.2	17	13.5
Doctorate	1	0.7	1	0.8
Total	140	100.0	126	100.0

	Rural		Urban	
Years of Nursing Experience	Frequency	Percent	Frequency	Percent
0 to 10	50	35.7	16	12.7
11 to 20	51	36.4	55	43.7
21 to 30	28	20.0	27	21.4
31+	11	7.9	25	19.8
Missing	0	0	3	2.4
Total	140	100.0	126	100.0

Table 5

Frequency Distributions for Rural Group (n = 140) and Urban Group (n = 126) by Annual Total Household Income

Annual Household Income	Rural		Urban	
	Frequency	Percent	Frequency	Percent
$0 to $25,000	8	5.7	4	3.2
$25,001 to $50,000	45	32.1	59	46.8
$50,001 to $75,000	54	38.6	39	31.0
$75,000 to $100,000	21	15.0	14	11.1
$100,000+	11	7.9	9	7.1
Missing	1	0.9	1	0.8
Total	140	100.0	126	100.0

Table 6

Frequency Distributions for Rural Group (n = 140) and Urban Group (n = 126) for Religious Affiliation and Religious Attendance

Religious Affiliation	Rural		Urban	
	Frequency	Percent	Frequency	Percent
Protestant	49	35.0	57	45.2
Catholic	37	26.4	44	34.9
LDS	20	14.3	3	2.4
Jewish	1	0.7	2	1.6
Other	30	21.4	19	15.1
Missing	3	2.1	1	0.8
Total	140	100.0	126	100.0

Religious Attendance	Rural		Urban	
	Frequency	Percent	Frequency	Percent
Once/Week	41	29.3	38	30.2
Once/Month	26	18.6	16	12.7
Several/Year	20	14.3	11	8.7
Rarely/Never	52	37.1	59	46.8
Missing	1	0.7	2	1.6
Total	140	100.0	126	100.0

34.2% of the group ranged between 33 to 43 years of age. The largest percentage of the urban group (34.9%) ranged between 44 to 54 years of age. The urban group also had 22.2% of the respondents age 55 or older in comparison to the rural group who had only 10.7% in this age group.

The majority of the respondents in both groups were female, 136 (97.1%) in the rural group and 117 (92.9%) in the urban group. For both the rural and urban groups, the majority of the respondents were caucasian, 96.4% and 92.1% respectively. The rural group had a significantly higher percentage of married respondents (81.4%) in comparison to the urban group (56.3%). Of the rural respondents, 8.6% were divorced in contrast to 29.4% for the urban group.

With regard to the highest level of education completed by the two groups, 61 (43.6%) of the rural respondents reported an Associate Degree in Nursing, 24 (17.1%) Diploma in Nursing, 44 (31.4%) Bachelor of Science in Nursing/Bachelor of Science, 10 (7.2%) Master of Science in Nursing/Master of Science, and 1 (0.7%) Doctorate in comparison to 31 (24.6%) of the urban respondents who reported an Associate Degree in

Nursing, 32 (25.4%) Diploma in Nursing, 45 (35.7%) Bachelor of Science in Nursing/Bachelor of Science, 17 (13.5%) Master of Science in Nursing/Master of Science, and 1 (0.8%) Doctorate.

Years of nursing experience ranged from 0 to 51 years, with rural respondents reporting less years of experience than urban respondents. In the rural group 50 (35.7%) respondents ranged from 0 to 10 years of experience with a mean of 15.40 years, while the urban group 16 (12.7%) respondents ranged from 0 to 10 years of experience with a mean of 21.17 years. Only 27.9% of the rural respondents had over 20 years of experience in contrast to 41.2% of the urban respondents. With regard to income, the largest number of rural respondents, 54 (38.6%) reported annual household incomes ranging from $50,001 to $75,000 in comparison to the largest number of urban respondents, 59 (46.8%) who reported incomes ranging from $25,001 to $50,000. The higher annual income for the rural group may be directly related to the larger percentage of married respondents in the rural group. Over 7% of both groups reported incomes exceeding $100,000.

The respondents in both the rural and urban groups

reported religious affiliation as predominantly Protestant, 35% and 45.2% respectively followed by Catholic, 26.4% and 34.9% and "Other", 21.4% and 15.1%. Church of Latter Day Saint (LDS) affiliation was identified by 14.3% of the rural respondents while a Jewish affiliation was reported by only 0.7%. Only 2.4% of the urban respondents reported LDS as their religious affiliation, while Jewish affiliation was identified by 1.6% of the urban responders. In regard to attendance at formal religious services, 29.3% of rural respondents reported attendance of at least once per week, 18.6% reported monthly attendance, 14.3% reported attendance several times per year, and 37.1% attended rarely or never. Of the urban respondents, 30.2% attended at least once per week, 12.7% attended monthly, 8.7% attended several times per year, and 46.8% attended rarely or never.

The frequency distributions for the variables of number of hours worked per week, college attendance, children residing at home, practice setting, years at practice setting, and years at residence are presented in Tables 7 to 10. The reported number of hours worked per week by rural and urban respondents ranged from 0

Table 7

Frequency Distributions for Rural Group (n = 140) and Urban Group (n = 126) by Hours Worked Per Week and College Attendance

Hours Worked Per Week	Rural Frequency	Rural Percent	Urban Frequency	Urban Percent
0 to 20	26	18.6	13	10.4
21 to 40	93	66.4	80	63.5
41 to 60	17	12.1	31	24.6
60+	0	0	2	1.6
Missing	4	2.9	0	0
Total	140	100.0	126	100.0

College Attendance	Rural Frequency	Rural Percent	Urban Frequency	Urban Percent
Yes	17	12.1	18	14.2
No	119	85.0	106	84.1
Missing	4	2.9	2	1.6
Total	140	100.0	126	100.0

Table 8

Frequency Distributions for Rural Group (n = 140) and Urban Group (n = 126) by Number of Children at Home

Number of Children at Home	Rural		Urban	
	Frequency	Percent	Frequency	Percent
None	43	30.7	67	53.2
1 to 3	86	61.5	53	42.0
4 to 6	7	5.0	2	1.6
Missing	4	2.9	4	3.2
Total	140	100.0	126	100.0

Table 9

Frequency Distributions for Rural Group (n = 140) and Urban Group (n = 126) by Practice Setting

Practice Setting	Rural		Urban	
	Frequency	Percent	Frequency	Percent
Hospital	65	46.4	69	54.8
Clinic	17	12.1	12	9.5
Home Health	8	5.7	7	5.6
Physician Office	5	3.6	6	4.8
Extended Care	6	4.3	5	4.0
University	2	1.4	3	2.4
Private Practice /Consultant	3	2.1	4	3.2
Other	27	19.3	18	14.3
Missing	7	5.0	2	1.6
Total	140	100.0	126	100.0

Table 10

Frequency Distributions for Rural Group (n = 140) and Urban Group (n = 126) by Years at Practice Setting and Years at Current Residence

Years at Current Practice Setting	Rural		Urban	
	Frequency	Percent	Frequency	Percent
0 to 5	97	69.3	51	40.5
6 to 10	24	17.1	27	21.4
10+	15	10.7	43	34.1
Missing	4	2.9	5	4.0
Total	140	100.0	126	100.0

Years at Current Residence	Rural		Urban	
	Frequency	Percent	Frequency	Percent
0 to 5	72	51.4	39	31.0
6 to 10	28	20.0	32	25.4
10+	36	25.7	50	39.7
Missing	4	2.9	5	4.0
Total	140	100.0	126	100.0

0 to 60 hours for rural with a mean of 33.37 hours, and 0 to 90 hours with a mean of 37.64 hours for urban. The largest number of respondents in each group, 48 (34.3%) of the rural respondents and 46 (36.5%) of the urban respondents, specifically reported working 40 hours per week. In response to the question of whether the nurse was currently attending college, 17 (12.1%) of the rural respondents and 18 (14.2%) of the urban respondents reported attending college. Rural respondents reported a significantly higher percentage of children residing at home than their urban counterparts. Rural respondents (61.5%) reported a range of 1 to 3 children residing at home, in contrast to 42% of the urban respondents.

Hospital setting was the most frequent practice site for rural and urban respondents, 46.4% and 54.8%, respectively. Clinic, home health and physician office accounted for 21.4% of the practice sites for rural respondents and 19.9% for urban respondents. The category of "other" was identified by 19.3% of rural respondents and 14.3% of urban respondents for practice site. Other practice sites included school (3), dental office (1), public health (3), state (1) and

freestanding surgical center (1). Five respondents reported being retired. In regard to number of years at practice setting, only 15 (10.7%) of the rural respondents reported working at the current practice setting longer than 10 years in contrast to 43 (34.1%) of the urban respondents. Employment of five years or less at current practice setting was the most frequently reported length of time of employment for both groups, 97 (69.3%) of rural and 51 (40.5%) of urban respondents.

In comparing the number of years at current residence, 51.4% of rural respondents had moved to their current residence within the past five years, whereas only 31% of the urban respondents had relocated within the last five years. A greater percentage of urban respondents (39.7%) had lived 10 or more years at their current residence in contrast to 25.7% of the rural respondents.

Health-Promoting Lifestyle Profile Scores

The possible total score range for the total Health-Promoting Lifestyle Profile ranged from 0 to 144. The rural group's scores ranged from 56 to 131 with a mean and standard deviation of 96.88 and 16.71,

while the urban group's scores ranged from 48 to 131 with a mean and standard deviation of 94.50 and 18.20. Low scores indicated low health-promoting lifestyle practices and high scores indicated high health-promoting lifestyle practices. The means and standard deviations for the rural and urban groups on the Health-Promoting Lifestyle Profile total score and six subscale scores are presented in Table 11.

Research Question 1

1. Is there a statistically significant difference between Nevada rural and urban nurses' scores on the total Health-Promoting Lifestyle Profile?

The rural group mean of 96.88 was slightly higher than the mean of 94.50 for the urban group. This difference however, was not statistically significant. ($t = -1.05$, $p = .294$). See Table 12. Consequently, the null hypothesis was retained.

Health-Promoting Lifestyle Profile Subscale Scores

Research Question 2

2. Is there a statistically significant difference between Nevada rural and urban nurses' scores on the Self-actualization subscale of the Health-Promoting Lifestyle Profile?

Table 11

Means and Standard Deviations on Health-Promoting Lifestyle Profile (HPLP) and Subscales for Rural and Urban Groups

	Rural (n = 140)		Urban (n = 126)	
	$\bar{X}$	SD	$\bar{X}$	SD
HPLP	96.88	16.71	94.50	18.21
Self-actualization	31.14	5.99	30.15	6.18
Health Responsibility	17.48	5.22	17.05	6.08
Exercise	7.06	3.84	6.89	3.64
Nutrition	12.23	3.57	11.83	3.54
Interpersonal Support	16.36	3.39	16.23	3.28
Stress Management	12.62	3.71	12.17	3.50

Table 12

T-Tests Comparing Rural Group (n = 140) and Urban Group (n = 126) Mean Scores on the Health-Promoting Lifestyle Profile (HPLP) and Subscales

	Rural		Urban			
	$\bar{X}$	SD	$\bar{X}$	SD	t-value	p*
HPLP	96.88	16.71	94.50	18.21	-1.05	.294
Self-actualization	31.14	5.99	30.15	6.18	-1.30	.196
Health Responsibility	17.48	5.22	17.05	6.08	-.61	.539
Exercise	7.06	3.84	6.89	3.64	-.35	.725
Nutrition	12.23	3.57	11.83	3.54	-.92	.361
Interpersonal Support	16.36	3.39	16.23	3.28	-.32	.746
Stress Management	12.62	3.71	12.17	3.50	-1.00	.316

*p (2-tailed probability)

Scores on the Self-actualization subscale of the Health-Promoting Lifestyle Profile ranged from 14 to 39 for the rural group and 8 to 39 for the urban group from a possible total score range of 0 to 39. Low scores on the subscale indicated a low level of self-actualization while high scores indicated a high level of self-actualization.

The means and standard deviations for the rural and urban groups on the Self-actualization subscale are presented in Table 11. The rural group had a mean of 31.14 which was slightly higher than the mean of 30.15 for the urban group. As shown in Table 12 however, there was no significant difference between the rural group and urban group mean scores on the Self-actualization subscale ($t = -1.30$, $p = .196$). Therefore, the null hypothesis was retained.

Research Question 3

3. Is there a statistically significant difference between Nevada rural and urban nurses' scores on the Health Responsibility subscale of the Health-Promoting Lifestyle Profile?

Scores on the Health Responsibility subscale of the Health-Promoting Lifestyle Profile ranged from 5 to

30 for the rural group and 4 to 30 for the urban group from a possible total score range of 0 to 30. Low scores on the subscale indicated a minimal level of responsibility for one's health, while high scores indicated a high level of responsibility for one's health.

The means and standard deviations for the rural and urban groups on the Health Responsibility subscale are presented in Table 11. The rural group had a mean of 17.48 in comparison to the urban group mean of 17.05. As shown in Table 12, there was no significant difference between the rural group and urban group mean scores on the Health Responsibility subscale ($t = -.61$, $p = .539$). The null hypothesis was retained.

Research Question 4

4. Is there a statistically significant difference between Nevada rural and urban nurses' scores on the Exercise subscale of the Health-Promoting Lifestyle Profile ?

Scores on the Exercise subscale of the Health-Promoting Lifestyle Profile ranged from 0 to 15 for the rural and urban groups which was identical to the possible total score range for the subscale. Low

scores on the subscale reflected low participation in exercise activities, while high scores reflected high participation in exercise activities.

The means and standard deviations for the rural and urban groups on the Exercise subscale are presented in Table 11. The rural group had a mean of 7.06 which was slightly higher than the mean of 6.89 for the urban group. Despite the higher rural group mean, there was no significant difference ($t = -.35$, $p = .725$) between the rural and urban group mean scores on the Exercise subscale as presented in Table 12. Therefore, the null hypothesis was retained.

Research Question 5

5. Is there a statistically significant difference between Nevada rural and urban nurses' scores on the Nutrition subscale of the Health-Promoting Lifestyle Profile?

Scores on the Nutrition subscale of the Health-Promoting Lifestyle Profile ranged from 2 to 18 for the rural group and 3 to 18 for the urban group from a possible range of 0 to 18. Low scores on the subscale reflected a low level of knowledge and/or selection of nutritious foods while high scores

reflected a high level of knowledge and selection of nutritious foods.

The means and standard deviations for the rural and urban groups on the Nutrition subscale are presented in Table 11. The rural group had a mean of 12.23 in comparison to the urban group mean of 11.83. However, as shown in Table 12, there was no significant difference between the rural group and urban group mean scores on the Nutrition subscale ($t = -.92$, $p = .361$). The null hypothesis was retained.

Research Question 6

6. Is there a statistically significant difference between Nevada rural and urban nurses' scores on the Interpersonal Support subscale of the Health-Promoting Lifestyle Profile?

Scores on the Interpersonal Support subscale of the Health-Promoting Lifestyle Profile ranged from 8 to 21 for the rural group and 7 to 21 for the urban group from a possible total score range of 0 to 21. Low scores on the subscale indicated the existence of minimal interpersonal relationships while high scores indicated the existence of close relationships.

The means and standard deviations for the rural

and urban groups on the Interpersonal Support subscale are presented in Table 11. The rural and urban group means were similar, 16.36 and 16.23, respectively. No significant difference was found between the rural and urban group mean scores ($t = -.32$, $p = .746$) on the Interpersonal Support subscale (Table 12), therefore the null hypothesis was retained.

Research Question 7

7. Is there a statistically significant difference between Nevada rural and urban nurses' scores on the Stress Management subscale of the Health-Promoting Lifestyle Profile?

The Stress Management subscale scores of the Health-Promoting Lifestyle Profile ranged from 4 to 21 for both the rural and urban groups from a possible total score range of 0 to 21. Low scores on the subscale indicated a diminished ability to recognize and cope with stressful events, while high scores reflected a high level of coping ability.

The means and standard deviations for the rural and urban groups on the Stress Management subscale are presented in Table 11. Mean scores varied slightly between the two groups. The rural group had a mean of

12.62 while the urban group had a mean of 12.17. As shown in Table 12, there was no significant difference between the rural group and urban group mean scores on the Stress Management subscale ($t = -1.00$, $p = .316$). Therefore, the null hypothesis was retained. Overall, the rural and urban nurses ranked in the 50th percentile or greater for mean scores on the Health-Promoting Lifestyle Profile and subscales, with the exception of the exercise subscale.

Research Question 8

8. Is there a statistically significant relationship between health-promoting lifestyle practices and age, education level, hours worked per week, years of nursing experience and annual household income of Nevada rural and urban nurses?

Health-promoting lifestyle practices were measured using the Health-Promoting Lifestyle Profile instrument. Pearson Product Moment Correlations were used to determine the relationship between the total Health-Promoting Lifestyle Profile score and subscale scores and selected demographic variables.

Statistically significant relationships were identified between the total Health-Promoting Lifestyle

Profile score, the subscale scores of Health Responsibility, Nutrition and Stress Management and the demographic variables of age, number of hours worked per week, years of nursing experience and income (Tables 13 & 14). A significant negative correlation was noted between number of hours worked per week and the subscale scores of Health Responsibility ($r = -.1943$, $p = .031$) and Nutrition ($r = -.2356$, $p = .009$) indicating that as hours worked per week increased, scores on the Health Responsibility and Nutrition subscales decreased. A significant negative correlation was also noted between annual household income and Stress Management ($r = -.1964$, $p = .029$) indicating that as income increased, scores on the Stress Management subscale decreased.

No significant correlations were identified between the subscale scores of Self-actualization, Exercise and Interpersonal Support and the selected demographic variables.

Statistically significant relationships between health-promoting lifestyle practices and age, years of nursing experience, hours worked per week, and annual household income were demonstrated using Pearson

Table 13

Pearson Correlation Coefficients for Select Demographic Variables and Health-Promoting Lifestyle Profile (HPLP) Subscales of Rural Group ($p < .05$)

HPLP Subscales	Age	Years Nursing Experience	Hours Worked Per Week	Annual Household Income
Health Responsibility	.2009 (134) .020	.2203 (135) .010	-	-
Nutrition	.1791 (136) .037	-	-	-
Stress Management	.2575 (135) .003	.2278 (136) .008	-	-

(Coefficient / (Cases) / 2-tailed probability)

(- = $p > .05$)

Table 14

Pearson Correlation Coefficients for Select Demographic Variables and Health-Promoting Lifestyle Profile (HPLP) and Subscales of Urban Group ($p < .05$)

HPLP & Subscales	Age	Years Nursing Experience	Hours Worked Per Week	Annual Household Income
HPLP	.2185 (113) .020	-	-	-
Health Responsibility	.3016 (123) .001	-	-.1943 (123) .031	-
Nutrition	.2221 (123) .014	.2107 (120) .021	-.2356 (123) .009	-
Stress Management	.2478 (125) .005	-	-	-.1964 (124) .029

(Coefficient / (Cases) / 2-tailed probability)

(- = p > .05)

Product Moment Correlations. Therefore, the null hypothesis related to these variables was rejected.

Additional Findings

A multivariate analysis of variance (MANOVA) was performed to test the significance of differences between the means of the six subscale scores of the Health-Promoting Lifestyle Profile, considered simultaneously. No significant difference in mean scores were identified for the six subscales ($F = .437$; df 1,237; $p = .853$).

T-test and Chi-Square analyses were performed on selected demographic variables where there appeared to be differences on the frequency distributions as presented in Tables 1 to 10. The demographic variables examined using T-test analyses included age, years at current practice setting, number of children residing at home, hours worked per week, years of nursing experience, years at current residence, income and frequency of attendance at religious functions. T-test analyses identified statistically significant differences between the rural and urban groups on age, years at current practice setting, hours worked per week, years of nursing experience and years at current

Table 15

T-Tests Comparing Rural Group (n = 140) and Urban Group (n = 126) Mean Scores on Demographic Variables of Age, Years at Practice Setting, Number of Children at Home, Hours Worked Per Week, Years of Nursing Experience, and Years at Residence

	Rural		Urban			
	$\bar{X}$	SD	$\bar{X}$	SD	t-value	p*
Age	41.57	9.61	46.44	10.81	3.89	.000
Years at Practice Setting	4.88	5.21	8.32	6.44	4.67	.000
Number of Children at Home	1.32	1.26	.78	1.08	-3.71	.000
Hours Worked Per Week	33.38	12.43	37.64	13.72	2.64	.009
Years of Nursing Experience	15.41	9.77	21.17	11.27	4.44	.000
Years at Residence	8.32	8.88	11.69	9.92	2.88	.004

*p (2-tailed probability)

residence (Table 14). The rural group was younger, had worked less years at their current practice setting and less years in nursing, had lived fewer years at their current residence and worked less hours per week.

The selected demographic variables examined using Chi-Square analyses included race, gender, marital status, education level, practice setting and religion. Statistically significant differences were identified between the rural and urban groups on race (X^2 = 12.623; df 4; p = .013), marital status (X^2 = 23.639; df 4; p = .000), education level (X^2 = 14.024; df 6; p = .029), and religious affiliation (X^2 = 16.060; df 4; p = .002). See Table 16.

The rural group consisted of 135 caucasian, 3 hispanic and 1 asian respondents, while the urban group consisted of 116 caucasian, 7 black and 1 other respondents. Marital status differed between the rural and urban group with the rural group reporting 114 married, 6 single and 12 divorced respondents, in contrast to 71 married, 11 single and 37 divorced urban respondents. A significant difference was noted between rural and urban nurses in level of education. The category of largest number of rural respondents was

Table 16

Chi-Square Analyses for Selected Demographic Variables of Rural and Urban Groups

	X^2	df	p
Race	12.623	4	.013
Marital Status	23.639	4	.000
Education Level	14.024	6	.029
Religious Affiliation	16.060	4	.002

Associate Degree in Nursing, 61 respondents in contrast to 31 for urban. A Diploma in Nursing was reported more frequently for urban respondents (32) in contrast to 24 respondents for the rural group. Rural respondents reported fewer Master of Science in Nursing/Master of Science degrees (10) in comparison to 17 for urban. In contrast to the urban respondents, the rural group reported fewer nurses with Protestant, Catholic and Jewish religious affiliations, and more respondents affiliated with the Latter Day Saints and "Other" religions.

Reliability of the Health-Promoting Lifestyle Profile and Subscales

The Cronbach's alpha estimate of internal consistency was utilized to evaluate the reliability of the total Health-Promoting Lifestyle Profile, and subscales (Table 17). The instrument was found to have high internal consistency, with an alpha coefficient of .911 for total instrument. Alpha coefficients for the subscales revealed .908 for Self-actualization, .805 for Health Responsibility, .786 for Exercise, .659 for Nutrition, .789 for Interpersonal Support, and .695 for Stress Management. The reliability coefficients were

Table 17

Internal Consistency of the Health-Promoting Lifestyle Profile and Subscales (n = 266)

	Number of Items	Alpha
Health-Promoting Lifestyle Profile	48	.911
Subscales		
Self-actualization	13	.908
Health Responsibility	10	.805
Exercise	5	.786
Nutrition	6	.659
Interpersonal Support	7	.789
Stress Management	7	.695

consistent with the coefficients reported by Walker, Sechrist and Pender (1987) with the exception of Nutrition which had a lower alpha coefficient in this study. Walker, Sechrist and Pender (1987) reported reliability coefficients of total instrument .922, with subscale coefficients ranging from .702 to .904. Of the subscales for this study, the lowest correlation coefficient was for Nutrition, while the highest was for Self-actualization.

This chapter has presented the results of the study. Analyses of the data and reliability testing of the research instrument were presented. Findings related to the research questions were discussed. The following chapter will discuss findings, present conclusions and make recommendations for future study and application of findings.

Chapter 5

SUMMARY, CONCLUSIONS, RECOMMENDATIONS

The purpose of this study was to compare health-promoting lifestyle practices of rural and urban nurses in Nevada. The research questions sought to determine if significant differences existed between rural and urban nurses on the total Health-Promoting Lifestyle Profile score and six subscale scores and selected demographic variables. To determine if rural and urban nurses in Nevada differed in health-promoting lifestyle practices, a descriptive correlational survey design was utilized. A total of 266 registered nurses, 140 rural and 126 urban, voluntarily participated in the study. Participation consisted of completion and return of two self-administered questionnaires, a biographical data sheet and the Health-Promoting Lifestyle Profile. The majority of the respondents were Caucasian, married females of Protestant religion. Pender's Health Promotion Model (1987) was utilized as the theoretical framework for the study. Select modifying factors consisting of behavioral factors, interpersonal influences and demographic factors in the Health Promotion Model were examined in relationship to

health-promoting lifestyle practices of rural and urban nurses in Nevada. A total of eight research questions were answered in the study.

Health-Promoting Lifestyle Profile

The reliabilities of the total Health-Promoting Lifestyle Profile and six subscales were consistent with the reliability coefficients reported by Walker, Sechrist and Pender (1987), with the exception of the Nutrition subscale. A Cronbach's alpha of .911 for the total instrument was identified for the sample population indicating high internal consistency of the total instrument for the sample population. Reliability coefficients for the subscales for the sample population ranged from .908 to .659. Walker, Sechrist and Pender (1987) reported reliability coefficients of total instrument .922, with subscale coefficients ranging from .904 to .702. A Cronbach's alpha of .659 was identified for the Nutrition subscale for the sample population in contrast to .757 reported by Walker, Sechrist and Pender (1987). The Nutrition subscale contains six items. A review of item-total statistics indicated that the deletion of any one item would not have increased the alpha coefficient for the

subscale in this sample. Previous studies have reported reliability coefficients ranging from .68 to .74 for the Nutrition subscale on adult sample populations (Duffy, 1988; Duffy, 1989; Pender, Walker, Sechrist & Frank-Stromborg, 1990; Walker, Volkan, Sechrist & Pender, 1988; Weitzel, 1989). The modest reliability coefficient for the Nutrition subscale raised the concern about the reliability of the Nutrition subscale for this sample. Walker, Sechrist and Pender (1987) acknowledged that exploration of additional items to strengthen the Nutrition and Stress Management subscales was warranted. The alpha coefficients for the Nutrition and Stress Management subscales in this study lend support to their recommendation.

Comparison of Health-Promoting Lifestyle Profile Scores

Mean scores on the total Health-Promoting Lifestyle Profile and subscales for the rural group were consistently higher than the urban group. Despite the difference between the mean scores, there were no statistically significant differences between the rural and urban groups on the total Health-Promoting Lifestyle Profile and subscales. Consequently, the null hypothesis was retained for research questions 1 to 7.

Several factors either in combination or individually may have contributed to the lack of statistical significance on the Health-Promoting Lifestyle Profile score and subscale scores between the rural and urban groups. Four potential contributing factors were identified in this study. An initial factor related to sample size. The accessible population for this study consisted of a maximum of 8,200 registered nurses licensed by the State Board of Nursing who reside in Nevada. Even though the sample consisted of 266 respondents, only 3.24% of the entire accessible population was surveyed. The ability to obtain significant differences between the two groups may have been attributed to the small sample size.

Another area of consideration related to the true representativeness of the sample. Due to the lack of available demographic data on registered nurses in Nevada, only comparisons on practice setting and highest level of education could be made between the sample group and the accessible population. Differences between the rural and urban groups in regard to demographics will be discussed in a separate section.

The 344 nonrespondents in the sample group may

have differed significantly from the respondents, thereby affecting the study's findings as a result of no response. Individuals who practice more health-promoting lifestyle behaviors may be more likely to volunteer for participation in a study on health-promoting lifestyle practices in contrast to individuals who are less likely to possess healthy lifestyle behaviors.

The final area of concern in this study involved the use of self-report measures for data collection. Polit and Hungler (1983) noted the inherent limitations regarding the validity and accuracy of self-report measures. The assumption made by investigators who use self-report instruments is that the participants will respond frankly to the questions. Nurses in this study may have felt the need to respond in a manner that reflected a health-promoting lifestyle due to perceived societal expectations of health care professionals. The impact of this potential bias remains unmeasured.

Relationship Between Demographic Variables and Total Health-Promoting Lifestyle Profile and Subscales Scores

Statistically significant relationships were identified between health-promoting lifestyle practices

and four selected demographic variables for rural and urban groups. Consequently, the null hypothesis was rejected for research question 8. Five significant correlations were identified for the rural group and eight for the urban group. Correlations for the rural group ranged from .179 to .257 ($p < .05$), while urban group correlations ranged from -.235 to .301 ($p < .05$). Age correlated with the subscales of Health Responsibility, Nutrition and Stress Management for rural and urban groups, as well as with the total Health-Promoting Lifestyle Profile score for the urban group. Several assumptions are possible which may lead to an explanation of these findings. The rural group's access to various health care providers and services may be limited due to geographical constraints. Self-reliance on healthy lifestyle practices in the areas of health responsibility, nutrition and stress management may have resulted due to the limited resources. Affiliation with Latter Day Saints and "Other" religions was reported more frequently for rural than urban nurses. The Latter Day Saint religion promotes abstinence from alcohol, tobacco and caffeine, which is consistent with a health-promotive lifestyle.

The significant findings for the rural group may have been attributed to the increased number of rural respondents affiliated with the Latter Day Saints religion. For the urban group, increased responsibility for one's health may increase as an individual ages due to the heightened awareness of one's mortality. This may explain the significant correlations in the older urban group. Despite the low correlations, these findings are consistent with previous health-promotion research (Pender, Walker, Sechrist and Frank-Stromborg, 1990; Walker, Volkan, Sechrist and Pender, 1988; Weitzel, 1989).

Three significant negative correlations were identified for the urban group. As hours worked per week increased, scores on the Health Responsibility and Nutrition subscales decreased. An inference could be made that as time away from the work setting decreases, the ability to care for one's personal needs declines. Rural nurses reported working less hours per week than urban nurses which may explain the absence of similar findings. A negative correlation between stress management and annual household income was also identified. Explanations for this finding are reflected

in two possible explanations. One is that increased income is a result of increased work hours. As an individual works more hours to increase income, the ability to cope decreases due to fatigue factors. Another explanation is that increased income is the result of assuming more work responsibility with concommitant increase in job stress and decreased coping abilities. Rural nurses reported less years of nursing experience and less education than urban nurses. The probability of rural nurses assuming administrative/management roles with concommitant increased responsibility may be less prevalent than for urban nurses, which may explain the absence of the negative correlation between stress management and income for the rural group. Due to the low correlations, the ability to generalize the findings is limited.

Demographic Factors

Significant demographic differences were identified between the rural and urban group in this study. The rural group was younger, had less years of nursing experience, worked fewer years at their current practice setting, lived fewer years at their current

residence, worked less hours per week and reported more children residing at home. It appears logical that since the rural group was younger, they would also have less years of nursing experience, fewer years at their current practice setting and possibly fewer years at their current residence. Working less hours per week could have been attributed to childcare responsibilities since the rural group reported more children residing at home than their urban counterparts. The age difference between the rural and urban group may be attributed to the types of occupations found in rural Nevada. Mining, ranching and farming are three common occupations found in rural Nevada which may attract younger married couples. This may explain why more younger married couples were found in rural settings in this study. The rural group also had fewer minority respondents. Since no data were available to compare minority group distribution in the State of Nevada, the possibility exists that a true representation of rural minorities was not obtained. The lack of a representative sample could explain the significant difference in race between the rural and urban groups. An Associate Degree in Nursing was the

most frequently reported level of education for the rural group, in contrast to a Bachelor's Degree in Nursing/Bachelor of Science for the urban group. This difference could be attributed to the decreased availability of baccalaureate programs in the rural setting. Protestant was identified as the predominant religion by both groups. Following Protestant and "Other", Latter Day Saints religion was reported more frequently by the rural group.

Only two state wide demographic statistics were available for comparing the representativeness of this sample with the accessible population (Nevada Nurses Association, 1990). Data from the Nevada Nurses Association indicate that hospitals are the major practice setting for Nevada's nurses. This is consistent with the findings for this sample. Level of education of the sample was not reflective of the accessible population according to Nevada Nurses Association statistics. The urban sample contained more master-prepared nurses and fewer associate-prepared nurses. The rural sample contained fewer diploma-prepared nurses and more nurses prepared at the baccalaureate level or higher. Due to the limited

availability of demographic data on registered nurses in Nevada, it remains unclear whether this sample was representative of the accessible registered nurse population in Nevada. Therefore, the ability to generalize these findings beyond this sample is restricted.

Findings Related to Framework

Pender's Health-Promotion Model (1987) was utilized as the theoretical framework for the study due to the model's emphasis on health-promoting behaviors. The Health Promotion Model is comprised of three components: cognitive-perceptual factors (individual perceptions), modifying factors and variables affecting the likelihood of action (internal or external activating cues). Modifying factors in the model are proposed to impact health-promoting behavior by their indirect influence on cognitive-perceptual factors. Modifying factors include demographic characteristics, biological characteristics, interpersonal influences, situational factors, and behavioral factors. The modifying factors examined in this study included behavioral factors, interpersonal influences and demographic factors as measured by the Health-Promoting

Lifestyle Profile and biographical data sheet. The variables of age, years of nursing experience, hours worked per week and annual household income were found to have significant relationships with health-promoting lifestyle practices, as previously discussed. These findings provide support for select modifying factors and their influence on health-promoting behaviors, as proposed in Pender's Health Promotion Model (1987). To determine if specific populations experience an increased association with select modifying factors, further research is warranted.

Implications for Nursing

Nurses need to be aware of their own lifestyle behaviors if they are to play an active role in health promotion of their clients. The findings of this study are encouraging since they suggest that nurses do practice a health-promoting lifestyle as measured by the Health-Promoting Lifestyle Profile. The rural and urban nurses ranked in the 50th percentile or greater for mean scores on the Health-Promoting Lifestyle Profile and subscales, with the exception of the exercise subscale. Subsequent research examining health-promoting behaviors of nurses using the

Health-Promoting Lifestyle Profile is warranted to substantiate this study's findings.

Concerns about the reliability of the exercise subscale of the Health-Promoting Lifestyle Profile were raised. Exploration and testing of additional items to strengthen the Exercise and Stress Management subscales is recommended.

The study suggests that relationships exist between selected demographic variables and health-promoting lifestyle practices. These findings may be reflective of this sample only. The ability to generalize the findings of this study is limited to registered nurses in Nevada. Therefore, additional research using a larger sample is warranted to determine if such relationships exist.

The urban repondents in this study were older than the rural respondents although no significant differences were noted on health-promoting lifestyle practices. This finding suggests the need for longitudinal studies as well as further studies on health-promoting practices of all adult age groups.

No significant differences in health-promoting lifestyle practices were identified between rural and

urban nurses in Nevada. This suggests the need for research to examine lifestyle practices of rural and urban populations in general to determine if similar findings are obtained.

Recommendations for Further Study

Based on the results of this study, the following recommendations for further study are suggested:

1. This study should be repeated using a larger sample size.

2. Additional testing of the Health-Promoting Lifestyle Profile is recommended to increase the reliability of the nutrition and stress management subscales.

3. Longitudinal studies examining health-promoting lifestyle practices of nurses throughout their careers are needed.

4. Continued use of the Health-Promotion Model as a theoretical framework for studies examining health-promoting practices of health care professionals is recommended.

5. To provide support to the validity of the self-report measure, the addition of an observational measure to confirm lifestyle practices is recommended.

APPENDICES

APPENDIX A

PENDER'S HEALTH PROMOTION MODEL

APPENDIX B

APPROVAL: HUMAN SUBJECTS' RIGHTS APPROVAL, SOCIAL BEHAVIORAL SUBCOMMITTEE OF THE INSTITUTIONAL REVIEW BOARD, UNIVERSITY OF NEVADA, LAS VEGAS

ASSOCIATE VICE PRESIDENT FOR RESEARCH

UNIVERSITY OF NEVADA, LAS VEGAS
4505 MARYLAND PARKWAY • LAS VEGAS, NEVADA 89154-1002 • (702) 597-4240 • FAX (702) 597-4242

DATE: August 10, 1992

TO: Donna Jacobs

FROM: Dr. William E. Schulze, Director of Research Administration
IRB Institutional Representative

SUBJECT: Approval of Human Subjects Protocol Project
Entitled "A Comparison of Health–Promoting Practices of Nevada Rural and Urban Nurses."

This memorandum is official notification that protocol for the project referenced above was approved on August 10, 1992 by the Social Behavioral Subcommittee of the Institutional Review Board.

If you have any questions or require any assistance, please give us a call.

APPENDIX C

COVER LETTER/CONSENT FORM

MASTER OF SCIENCE PROGRAM
NURSING

UNIVERSITY OF NEVADA, LAS VEGAS
4505 MARYLAND PARKWAY • LAS VEGAS, NEVADA 89154-3018 • (702) 739-3360

JUNE 1992

Dear Registered Nurse:

Growing evidence indicates that lifestyle practices can influence an individual's health and longevity. The nurse as a member of the health care profession has the opportunity to serve as a resource and role model for the public in promoting a healthy lifestyle. In order for nursing to assist others in leading a healthy lifestyle, nurses need to be at their optimum health.

As a graduate student in the Department of Nursing at the University of Nevada, Las Vegas, I am conducting a research study to assess health-promoting practices of nurses in rural and urban Nevada. Your name was randomly selected from a list of licensed registered nurses provided by the Nevada State Board of Nursing. Although there are no personal benefits to you, the results of this study will assist the nursing profession in determining the readiness of nurses to serve as advocates of health promotion.

Enclosed with this letter are two questionnaires to be completed, a biographical data sheet and a questionnaire on health-promoting lifestyle practices. Completion of the instruments will require approximately fifteen minutes of your time. Participation in this study is entirely voluntary. Completion and return of the questionnaires will demonstrate your consent to participate in the study.

Your name will not appear on the questionnaires, therefore, anonymity will be maintained throughout the study. In addition, individual responses will be reported as grouped findings only maintaining confidentiality of each participant. A summary of the findings will be available to you upon request.

Thank you for your cooperation and support.

Sincerely,

Donna K. Jacobs

Donna K. Jacobs, R.N., B.S.N.
Graduate Student

APPENDIX D

HEALTH-PROMOTING LIFESTYLE PROFILE AND BIOGRAPHICAL DATA SHEET

BIOGRAPHICAL DATA SHEET

DIRECTIONS: Please complete the following items.

AGE: ___

SEX: ___ FEMALE ___ MALE

RACE: ___ CAUCASIAN ___ BLACK ___ HISPANIC
___ NATIVE AMERICAN ___ ASIAN ___ OTHER

MARITAL STATUS: ___ SINGLE ___ MARRIED
___ DIVORCED ___ WIDOWED ___ SEPARATED

NUMBER OF CHILDREN CURRENTLY RESIDING AT HOME: ___

HIGHEST LEVEL OF EDUCATION COMPLETED:
___ A.D.N. ___ DIPLOMA ___ B.S.N. ___ M.S.N.
___ B.S. (OTHER FIELD) ___ M.S. (OTHER FIELD)
___ D.N.S./Ph.D. NURSING ___ DOCTORATE (OTHER)

CURRENTLY ATTENDING COLLEGE:
___ YES **NUMBER OF CREDITS ENROLLED:** ___
___ NO

PRACTICE SETTING: ___ HOSPITAL ___ CLINIC
___ HOME HEALTH ___ PHYSICIAN'S OFFICE
___ EXTENDED CARE ___ UNIVERSITY
___ PRIVATE PRACTICE/CONSULTANT ___ OTHER

NUMBER OF YEARS AT CURRENT PRACTICE SETTING: ___

AVERAGE HOURS WORKED PER WEEK: ___

YEARS OF EXPERIENCE IN NURSING: ___

CURRENT RESIDENCE: ___ RURAL ___ URBAN

NUMBER OF YEARS RESIDING AT CURRENT LOCALITY: ___

ANNUAL <u>TOTAL HOUSEHOLD</u> INCOME: ___ $0 - 25,000
___ $25,001 - 50,000
___ $50,001 - 75,000
___ $75,001 - 100,000
___ $100,001 +

RELIGIOUS AFFILIATION: ___ PROTESTANT ___ CATHOLIC
___ LDS ___ JEWISH ___ OTHER

FREQUENCY OF ATTENDANCE AT ORGANIZED RELIGIOUS FUNCTIONS:
___ AT LEAST ONCE/WEEK ___ AT LEAST ONCE/MONTH
___ SEVERAL TIMES/YEAR ___ RARELY/NEVER

APPENDIX E

PERMISSION FOR USE OF

HEALTH-PROMOTING LIFESTYLE PROFILE

HEALTH-PROMOTING LIFESTYLE PROFILE

Dear Colleague:

We are pleased to reply to your request for information about our Health-Promoting Lifestyle Profile. In order to respond promptly to the large volume of correspondence we receive, we have found it necessary to prepare this standard letter containing information that is commonly sought. We hope that you will feel free to write or call as necessary to obtain any further information that you may need.

The Health-Promoting Lifestyle Profile measures health-promoting behavior, conceptualized as a multidimensional pattern of self-initiated actions and perceptions that serve to maintain or enhance the level of wellness, self-actualization and fulfillment of the individual. The 48-item summated behavior rating scale employs a 4-point response format to measure the frequency of self-reported health-promoting behaviors in the domains of self-actualization, health responsibility, exercise, nutrition, interpersonal support and stress management. It was developed for use in research within the framework of the Health Promotion Model (Pender, 1987), but has subsequently been employed for a variety of other purposes as well. The development and psychometric evaluation of the English language versions were described by Walker, Sechrist and Pender (1987) and scores among the initial study sample were reported by Walker, Volkan, Sechrist and Pender (1988). The translation and psychometric evaluation of the Spanish language version as well as scores among a Hispanic sample were reported by Walker, Kerr, Pender and Sechrist (1990).

There is no charge for such authorized use, but we would appreciate receiving notification of your intent to use the instrument and a report of your completed study/project for our files. It is particularly useful to know of any publications reporting use of the instrument so that we can maintain an accurate complete listing. To facilitate record keeping, all information should be sent to:

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We thank you for your interest in using the Health-Promoting Lifestyle Profile and wish you much success with your efforts.

Sincerely, Susan N. Walker

Susan Noble Walker Karen R. Sechrist Nola J. Pender

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