ABSTRACT

RELATIONSHIP BETWEEN HEALTH LOCUS OF CONTROL
AND HEALTH-RELATED BEHAVIORS OF NURSE PRACTITIONERS

By Stacey L. Gusman

Nurse practitioners (NPs) are experienced nurses with the education and clinical experience to instruct and counsel individuals and their families regarding healthy lifestyle behaviors. Nurse practitioners have great influence on their ability to be positive role models. The purpose of this study was to examine the relationship between health locus of control (HLC) and health-related behaviors.

A descriptive-correlation design was used in this quantitative study. Using systematic sampling, 100 members of the Wisconsin Advanced Nurses Association were selected. Three instruments were mailed to participants. Fifty-nine NPs returned the instruments for a response rate of 59%. Pearson's r was used to identify the relationship between the variables. The theoretical framework selected as Pender's Health Promotion Model.

Internal health locus of control (IHLC), the tendency to perceive responsibility for one's health lies with the individual, scored consistently higher by participants. The IHLC had a mean of 27.1 and a standard deviation of 4.0. Participants identified themselves as participating often in interpersonal relations \( r = .49, p < .026 \), spiritual growth \( r = .49, p < .001 \), and stress management \( r = .32, p < .013 \). The researcher concluded that NPs have control over their own health and often find peace within themselves, have meaningful and fulfilling relationships, and find time for relaxation each day.
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AND HEALTH-RELATED BEHAVIORS OF NURSE PRACTITIONERS

by

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To my family for their devotion and encouragement. To my husband; without his love, support and confidence, I would have been unable to make it through this process.
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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIST OF TABLES</td>
<td>vi</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>vii</td>
</tr>
<tr>
<td>CHAPTER I – INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>Significance to Nursing</td>
<td>4</td>
</tr>
<tr>
<td>Statement of Problem</td>
<td>6</td>
</tr>
<tr>
<td>Purpose of the Study</td>
<td>7</td>
</tr>
<tr>
<td>Research Questions</td>
<td>7</td>
</tr>
<tr>
<td>Definitions of Terms</td>
<td>7</td>
</tr>
<tr>
<td>Conceptual Definitions</td>
<td>7</td>
</tr>
<tr>
<td>Operational Definitions</td>
<td>8</td>
</tr>
<tr>
<td>Assumptions</td>
<td>9</td>
</tr>
<tr>
<td>Summary</td>
<td>9</td>
</tr>
<tr>
<td>CHAPTER II – THEORETICAL FRAMEWORK AND LITERATURE REVIEW</td>
<td>10</td>
</tr>
<tr>
<td>Introduction</td>
<td>10</td>
</tr>
<tr>
<td>Theoretical Framework</td>
<td>10</td>
</tr>
<tr>
<td>Theoretical Foundations</td>
<td>10</td>
</tr>
<tr>
<td>The Concept of Health Promotion</td>
<td>13</td>
</tr>
<tr>
<td>The Health Promotion Model</td>
<td>15</td>
</tr>
<tr>
<td>Individual Characteristics and Experiences</td>
<td>16</td>
</tr>
<tr>
<td>Behavior-Specific Cognitions and Affect</td>
<td>17</td>
</tr>
<tr>
<td>Behavioral Outcomes</td>
<td>19</td>
</tr>
<tr>
<td>Health Outcomes</td>
<td>20</td>
</tr>
<tr>
<td>Health Promotion Model: Implications for Health-Related Behaviors</td>
<td>20</td>
</tr>
<tr>
<td>Review of Literature</td>
<td>21</td>
</tr>
<tr>
<td>Nurses' Perceived Role in Health Promotion</td>
<td>22</td>
</tr>
<tr>
<td>Health-Related Behaviors</td>
<td>24</td>
</tr>
<tr>
<td>Physical Activity</td>
<td>28</td>
</tr>
<tr>
<td>Stress Management</td>
<td>29</td>
</tr>
<tr>
<td>Smoking Cessation</td>
<td>31</td>
</tr>
<tr>
<td>Nutrition</td>
<td>32</td>
</tr>
<tr>
<td>Health Locus of Control</td>
<td>34</td>
</tr>
<tr>
<td>Summary</td>
<td>37</td>
</tr>
</tbody>
</table>
TABLE OF CONTENTS (Continued)

<table>
<thead>
<tr>
<th>CHAPTER III – METHODOLOGY</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>39</td>
</tr>
<tr>
<td>Design of Study</td>
<td>39</td>
</tr>
<tr>
<td>Setting and Sampling</td>
<td>39</td>
</tr>
<tr>
<td>Data Collection Instruments</td>
<td>40</td>
</tr>
<tr>
<td>Demographic Data Profile</td>
<td>40</td>
</tr>
<tr>
<td>Multidimensional Health Locus of Control (Form A)</td>
<td>41</td>
</tr>
<tr>
<td>Health Promotion Lifestyle Profile II</td>
<td>42</td>
</tr>
<tr>
<td>Data Collection Procedure</td>
<td>43</td>
</tr>
<tr>
<td>Data Analysis</td>
<td>43</td>
</tr>
<tr>
<td>Summary</td>
<td>44</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHAPTER IV – FINDINGS AND DISCUSSION</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>45</td>
</tr>
<tr>
<td>Sample</td>
<td>45</td>
</tr>
<tr>
<td>Research Question One: What is HLC of NPs?</td>
<td>46</td>
</tr>
<tr>
<td>Research Question Two: What Are the Health-Related Behaviors of NPs?</td>
<td>48</td>
</tr>
<tr>
<td>Research Question Three: What Is the Relationship Between HLC and Health-Related Behaviors of NPs?</td>
<td>50</td>
</tr>
<tr>
<td>Summary</td>
<td>53</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHAPTER V – SUMMARY, CONCLUSIONS LIMITATIONS, AND RECOMMENDATIONS</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>54</td>
</tr>
<tr>
<td>Summary</td>
<td>54</td>
</tr>
<tr>
<td>Conclusions</td>
<td>57</td>
</tr>
<tr>
<td>Recommendations</td>
<td>58</td>
</tr>
<tr>
<td>Implications for Nursing Practice</td>
<td>58</td>
</tr>
<tr>
<td>Implications for Nurse Educators</td>
<td>59</td>
</tr>
<tr>
<td>Implications for Nursing Research</td>
<td>59</td>
</tr>
<tr>
<td>Limitations</td>
<td>60</td>
</tr>
<tr>
<td>Chapter Summary</td>
<td>60</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>APPENDIXES</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Appendix A: Demographic Data Instrument</td>
<td>62</td>
</tr>
<tr>
<td>Appendix B: Multidimensional Health Locus of Control (Form A)</td>
<td>64</td>
</tr>
<tr>
<td>Appendix C: Health-Promoting Lifestyle Profile II</td>
<td>66</td>
</tr>
<tr>
<td>Appendix D: UW Oshkosh IRB Approval Letter</td>
<td>69</td>
</tr>
<tr>
<td>Appendix E: Information Letter and Informed Consent</td>
<td>71</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REFERENCES</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>74</td>
</tr>
</tbody>
</table>
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 1.</td>
<td>Descriptive Statistics of Sample Characteristics</td>
<td>41</td>
</tr>
<tr>
<td>Table 2.</td>
<td>Descriptive Statistics of the HPLP II Subscales</td>
<td>49</td>
</tr>
<tr>
<td>Table 3.</td>
<td>Pearson Correlation Between Multidimensional Health Locus of Control Tool, Health Promotion Lifestyle Profile, and the Subscales of Both Tools</td>
<td>51</td>
</tr>
<tr>
<td>Figure 1.</td>
<td>Pender's Revised Health Promotion Model</td>
<td>11</td>
</tr>
</tbody>
</table>
CHAPTER I
INTRODUCTION

Throughout the past decade it has become evident that lifestyle patterns and health risk factors are associated with the current major causes of morbidity and mortality. Such lifestyle-related illnesses and health risk factors include hypertension, stroke, diabetes, heart disease and cancer. Health-promoting activities and a healthy lifestyle should be regarded as major strategies to facilitate and preserve health. The role of health care providers includes health promotion and providing clinical and curative services. Health care providers need to embrace health promotion, ensuring they are sensitive and respectful of their clients' individual needs.

Among those who should be responsible for health promotion, nurses are at the top of the list. Nurses, because of their recognized expertise and frequent continuing contact with clients, have the unique opportunity of providing leadership in the promotion of better health among individuals, families, and communities. Teaching about healthy lifestyle is one of the most effective methods of fostering health promotion for nurses. Through close communication, nurses can motivate their patients by increasing their knowledge of their own health beliefs and health behaviors. Nurses can also encourage patients to make the necessary changes to adopt and maintain a healthy lifestyle. The goal is to enable clients and their families to achieve optimum well-being and prevent future health problems.

Nurses are often seen as role models. Nurses should serve as both role models and leaders for their patients when it comes to health-promoting lifestyles. Evidence suggests that noncompliance of patients in health-promoting behaviors can be costly to
health services and may be influenced by the noncompliance of those caring for them. Nurses have the potential to influence their clients' behaviors. Nurses who act as role models of healthy lifestyles in general encourage their clients to do the same. In other words, nurses cannot meet the clients' needs unless they pay attention to their own health-promoting lifestyles. It may even be more important that the nurses themselves have healthy lifestyles, thus serving as role models for patients. Nurses are selling a product, and that product is health.

Nurse practitioners (NPs) are advanced practice nurses who provide high-quality health care services. Nurse practitioners diagnose and treat a wide range of clinical health problems. Besides clinical care, NPs focus on health promotion, disease prevention, health education and counseling. They counsel and assist patients in making lifestyle modifications and maintaining a high quality of health. Nurse practitioners are in a unique position: they are not only health educators and advocates, but are also role models as previously mentioned.

The organizing framework for this study was Pender's Health Promotion Model (HPM). The HPM was developed to explain individual characteristics and experiences as well as how behavior-specific cognition and affect influence behavioral outcomes (Pender, Murdaugh & Parsons, 2002). Pender (1999) developed the HPM to suggest that one's cognitive perceptual beliefs such as definition of health, and perceived benefits of and barriers to health-promoting behaviors affect the likelihood of adopting a wellness oriented lifestyle (Pender). These beliefs in turn are affected by modifying factors such as age, gender, and interpersonal influences. Nurse practitioners are knowledgeable health advisors who can take a leadership role in health promotion by educating clients and their families about health-related behaviors and by encouraging
participation in these behaviors. For the purpose of this study, health-related behaviors were defined as any activity taken under by an individual for the purpose of promoting, protecting or maintaining health (Pender).

Health promotion is receiving ever-increasing attention regarding the prominent role it plays in health care. The high costs in health care have necessitated a shift in the emphasis of care to the prevention of disease, rather than strictly the treatment of disease (Adams, Bowden, Humphrey, & McAdams, 2000). Historically, the relationship between health promotion and disease prevention has been the focus of studies conducted by nurses and other health professionals. However, since the late 1980s when public attention focused more readily on health promotion, the demand has risen for information to explain the factors that motivate people to seek their health potential (Pender, 1996).

The credibility of nurses as health educators is linked to the expectation that they model healthy behaviors, and their effectiveness as role models is judged on the basis of observable compliance with these behaviors. As NPs take a leadership role in health promotion through educating clients about health-related behaviors, they become role models for these behaviors. Thus the health practices adopted by NPs may influence how they educate clients in a positive or negative way. Discrepancies exist between what people think they should do, and what they actually do. Nurse practitioners may model one behavior differently than they counsel their clients to perform that behavior. What NPs believe about healthy lifestyles and what their own health practices are, may influence their effectiveness in providing health care for others.

To summarize, the more nurses and other health care providers practice good health habits themselves, the more likely they are to counsel patients to do likewise.
And if they share their healthy habits with their clients, they are even more effective in helping those clients make healthy lifestyle changes. Nurses and other health care providers should therefore be encouraged to have more healthy personal habits. This could not only improve the health of the provider, but also be an extraordinarily efficient way to improve the health of all their patients. Frank, Breyan and Elon (2003) studied the influence physicians’ disclosure of healthy personal behaviors had on improving the credibility and ability to motivate their patients. They studied 130 patients who were instructed to watch a 2-minute diet and exercise video. Those who were randomized to the group heard an extra 30 seconds of content about the doctors’ own healthy exercise and dietary habits. Those who heard about their physicians’ health practices were found to be more believing and motivated to exercise. Similarly, Hash, Munna, Vogel and Bason (2003), found that patients (n = 226) of non-obese versus obese physicians were more receptive to counseling regarding treatment of illness (p < .038) and health advice (p < .049).

Significance to Nursing

The World Health Organization (WHO, 2007) contends that health promotion includes encouraging healthy lifestyles, creating supportive environments for health, strengthening community action, reorienting health services, and building public health policy (Goeppinger, 1993; Pender, 1996). Health care organizations have promoted efforts to emphasize the role of health promotion and to deter smoking among health care professionals, particularly nurses. The WHO for example, has documented a new code of conduct which asks all health care professionals to lead by example and reduce their smoking (WHO). This call for action by the WHO has evolved from ongoing reports
which suggest that even a brief counseling encounter by a health care professional on the dangers of smoking and the importance of quitting is one of the most cost-effective methods to reduce smoking. With this in mind, studies have also found that as a consequence of their own tobacco use, nurses who smoked did not place the same value on tobacco education for their patients compared to those nurses who did not smoke (Sarna, Brown, Lillington, Wewers & Brecht, 2000). These findings suggest that nurses who smoke may fail to educate their patients adequately, if at all given their own health threatening behavior, thus jeopardizing their health promotion role. Nurses should explore psychosocial factors underlying health promotion behaviors, the impact of lifestyle on health status, and strategies to develop personal responsibility for health (Bushy, 1991). Identification of these factors will serve as valuable pieces of information for both the general public and health care professionals.

The factors that influence health behaviors are multidimensional. All factors are interrelated and, therefore, produce results that exert both direct and indirect influences on health promoting behaviors. These factors cooperatively support the processes that influence individuals to make decisions and participate in health promoting behaviors. Identification of the interrelationships and an understanding of the dynamics that facilitate health specific behaviors provide insight both health compromising and to health-enhancing behaviors, and is what makes the model useful to researchers (Pender, 1996).

Pender et al. (2002) believe nurses should serve as role models of promoting healthy lifestyles. Nurses are the largest group of health care providers and have the ability to make health promotion and health prevention services available to all population groups. Pender et al. also discuss the need for nurses to continue their work
toward distribution of health care resources to insure quality health promotion and illness prevention services. The narrow healthy lifestyle conception has been perpetuated in the few research studies that have examined nurses as role models for health promotion (Callaghan, Fun & Yee, 1997; Connolly, Gulanick, Keough & Holm, 1997; Haughey, Mathewson-Kuhn & Dittmar, 1992). In these studies, inferences about nurses as role models for health promotion have been based solely on whether they practice outwardly observable healthy behaviors. Nurses' views of themselves have been consistent with this conceptualization.

Role-modeling by nurses is a choice. The focus in society on healthy lifestyles is a challenge for nurses not only to join, but also to lead. According to a study by Callaghan (1999), nurses' health-related behaviors are linked to health and longevity and influenced significantly by their beliefs about the importance of health behaviors. In a cross-sectional survey design, 113 nurses were given a health behavior survey and a scale measuring nurses' beliefs about the importance of health-related behaviors. Twenty-seven health behaviors were included on the scale and of those, 14 were influenced by nurses' beliefs about the importance of these behaviors.

Statement of Problem

What is the relationship between health locus of control (HLC) and health-related behaviors of NPs? Previous research has shown empirically the link between nurses' health-related behaviors and their role in health promotion. Therefore, information on what may be influencing nurses' health-related behaviors, such as HLC can be used to improve these behaviors. Understanding NPs' individual HLC allows researchers to
explore further how those beliefs affect NPs' health-related behaviors and inevitably influence their health promotion role.

Purpose of the Study

The purpose of the study was to investigate the relationship between HLC and health-related behaviors of NPs.

Research Questions

1. What is the HLC of NPs?
2. What are the health-related behaviors of NPs?
3. What is the relationship between HLC and health-related behaviors of NPs?

Definitions of Terms

The major concepts in this study are defined conceptually and operationally to insure comprehension of their contextual use within this study.

Conceptual Definitions

Nurse practitioner: An NP is a registered nurse who has advanced education and clinical training at the master’s level in a health care specialty area (American Nurses Association [ANA], 2006). Nurse practitioners have master’s degrees, advanced education and clinical training beyond their registered nurse preparation. Nurse practitioners are licensed in all states and practice under the rules and regulations of the state. Most NPs are nationally certified in their specialty area and are recognized as
expert health care providers. The faith that patients have in NPs is shown by the almost 600 million visits made to NPs each year (ANA).

*Health locus of control:* An individual's belief that one's behavior or, more correctly, the reinforcements from behavior, are under one's own control (Wallston, Wallston, & DeVellis, 1978).

*Health-related behaviors:* Any activity undertaken by an individual, regardless of actual or perceived health status, for the purpose of promoting, protecting or maintaining health, whether or not such behavior is objectively effective towards that end (Pender, 1996).

*Operational Definitions*

*Nurse practitioner:* For the purpose of this study, NPs in the study are master's prepared, work part time or full time, have 1 year or more experience, and work in a primary care setting (Wisconsin Nurses Association, 2007).

*Health locus of control:* Relies on individual differences between how they perceive events as a result of their own behavior or enduring characteristics (internal), or as being controlled by some other variable like chance, God, or an authority (external) (Wallston, Wallston, Kaplan, & Maides, 1976). The HLC of the NP will be measured using the Multidimensional HLC Scale (MHLCS) Form A. This scale defines perceptions of what controls ones’ health. The MHLCS measures the parameters of health beliefs and contains three subscales: (a) internal expectancy, (b) chance external expectancy, (c) and external expectancy.

*Health-related behavior:* The health-related behaviors of the NP will be measured using the Health Promoting Lifestyle Profile. The tool measures the frequency of health promoting behaviors and contains 52 items divided into six subscales: self-actualization,
health responsibility, exercise, nutrition, interpersonal support, and stress management (Pender, 1996).

Assumptions

1. Nurse practitioners responded honestly to the questions on the survey and their responses are valid.

2. Knowledge of health promotion influences the HLC of NPs.

3. Nurse practitioners share the primary goal of health promotion as healthcare professionals.

4. Nurse practitioners have the personal responsibility to promote their own health through positive health-promoting behaviors.

Summary

Researchers have concluded that NPs can improve their health promotion role if they incorporate health related behaviors into their own lives. However, there is minimal research identifying factors that influence NPs' HLC. The purpose of the study was to investigate the relationship between HLC and health-related behaviors of NPs.
CHAPTER II
THEORETICAL FRAMEWORK AND LITERATURE REVIEW

Introduction

The purpose of the study was to investigate the relationship between HLC and health related behaviors of NPs. The theoretical framework selected for this study is Pender’s HPM. The model will be discussed along with its relationship to the phenomenon of the study. An in-depth review of pertinent literature will be also discussed.

Theoretical Framework

The conceptual framework for this research was developed from Pender’s Revised HPM (Figure 1) (Pender, 1996; Pender et al., 2002). According to the HPM, interpersonal influences are cognitions that can control beliefs, behaviors, or attitudes of others. Health care providers are important sources of interpersonal influence that can increase or decrease commitment to and engagement in health-promoting behavior.

Theoretical Foundations

In Pender’s HPM, determinants of health-promoting lifestyle are divided into cognitive-perceptual factors, modifying factors, and likelihood of action. Originally, the model was proposed as a foundation of why individuals engage in health-seeking behaviors. The HPM’s foundation is based on the definition of health that one believes, and focuses on the person as a whole person, as well as the positive aspects of health.
Figure 1. Pender's revised health promotion model.
The HPM represents a theoretical perspective in which it explores the factors and relationships that increase health-promoting behavior and actions leading to improved health and quality of life.

The HPM was developed as a framework for predicting health behaviors. The model seeks to explain individual characteristics and experiences, as well as how behavior-specific cognition and affect influence these behavioral outcomes. Health-promoting behaviors are a desired outcome when providing client care and education. Health-promoting behaviors may be defined as actions toward attaining positive health outcomes, such as well-being, personal fulfillment, and quality living (Tomey & Alligood, 1998; Srof & Velsor-Friedrich, 2006). Pender (1996) defined health as positive, comprehensive, and humanistic. Pender does not make disease the principal focus of health. Her definition of health includes an individual's, lifestyle, strengths, resiliency, potentials, and capabilities.

Pender's (1996) theory explains that the major determinant of behavior is the individual's intent for that behavior. This means that the individual is more likely to perform a certain behavior if the outcome is desirable. This theory is an extension of the reasoned theory. Reasoned theory suggested that the individual will more than likely perform a behavior if he/she believes there is control in the situation. Pender's theory also is derived from Bandura's (1993) social cognitive theory, which is self-efficacy. Self-efficacy is the confidence an individual has in her ability to successfully carry out an action. Bandura's theory proposes that the greater the individual's self efficacy, the more likely the person will perform the behavior with success. Pender agrees that if an individual has high perceived competence in a certain behavior, then the results suggest that the individual will perform the behavior with success.
Pender revised the HPM in 1996. The revised model describes the interaction between individual characteristics and past experiences with behavior-specific cognitions and affect (subjective feeling states about the behavior). These characteristics/experiences along with cognitions/affect influence an individual's commitment to a plan of action for engaging behaviors directed toward attaining positive health outcomes. Individual characteristics include past experiences with the same or similar behaviors. These previous experiences directly or indirectly influence behavior. Personal characteristics include physical or physiologic states such as age, gender, or body mass. Personal characteristics also may include psychological states such as perceived health status, self-esteem, motivation, or definition of health (Pender, 1996).

The Concept of Health Promotion

The HPM serves the function of identifying concepts relevant to health-promoting behaviors. The model includes multiple concepts and relationships. However, some concepts are more prominent than others for specific health behaviors. This model does not provide assistance in selecting which concepts are appropriate for specific behaviors. The researcher who uses this model must select concepts based on previous research regarding a specific behavior (Peterson & Bredow, 2004). Walker and Avant (2005) noted that the HPM is composed of clearly specified causal paths. The ordering of the concepts is clear, with modifying or background factors having a causal impact on cognitive perceptual factors, which in turn, affect participation in particular health-promoting behaviors.

Considering major assumptions, health is seen as a positive high-level state. The individual is seen as having a drive toward health. The person is an individual and the focus for the model. Each person is expressed by a unique pattern of cognitive-
perceptual and modifying factors. Specific theoretical assumptions are not indicated by Pender (1996), yet the model represents interrelationships between cognitive-perceptual factors that influence the occurrence of health-promoting behaviors.

The HPM has proven to be a primary and popular resource with health promotion activities in nursing. The concept of health promotion is popular in practice. Personal responsibility for one's own health care has become more prominent in the past decade. In contrast to practice, the use of health promotion has not been as well established in nursing education. Health promotion is currently placed behind illness care in clinical education. The model continues to be refined and tested for its ability to explain factor relationships among the variables that influence health behavior changes (Pender, 1996).

King (1994) defined health promotion as a multidisciplinary function and nurses currently face strong incentives to adopt a collaborative approach with other disciplines. Nursing must first embrace and then further develop the concepts of health, wellness, and client from the nursing perspective. When the developed concepts are accepted, in theory and in practice, nursing will more fully grasp and influence the collaborative nature that health promotion requires. Sitzman and Eichelberger (2004) explored the assumptions that form the foundation of a theory by clarifying the meaning of the theory. These authors suggest that Pender's HPM is based on these following assumptions:

1. Individuals seek to create conditions of living so they may express their unique human potential.

2. Individuals have the ability to reflect self-awareness.

3. Individuals value growth in directions as positive and attempt to achieve a balance between change and stability.
4. Individuals seek to regulate their own behavior.

5. Individuals interact with their environments and with themselves over time.

6. Self-initiated reconfiguration of person-environment is essential to behavior change.

7. Health professionals constitute a part of the interpersonal environment, throughout their life spans.

Nurses play an increasing valuable role in assisting individuals in promoting their health. The close and continuous relationship with individuals while guiding their response to health and illness puts nurses in a unique position to further examine the factors that influence health (Morgan & Marsh, 1998). Along with providing individuals with information and skills that enable them to adopt healthy lifestyles, nurses must also promote environments supportive of healthy behaviors. For this reason, nurses serve as advocates for individuals and can help those who face barriers in their efforts to obtain a healthy lifestyle. Nurses have widely used Pender's (1996) HPM as a source to help them guide individuals as the attempt to achieve their goals of health and well-being. Consistent with the health promotion perspectives, this positive, multidimensional, holistic, model of health helps to identify factors that may affect health status (Pender et al., 2002). In the HPM, health is the ability to identify, emphasize, and build on the strengths, weaknesses, resources, and potential of individuals (Gillis, 1995).

*The Health Promotion Model*

The revised HPM, includes determinates of health-promoting behaviors which are categorized into individual characteristics and experiences and behavior-specific cognitions and affects. The main concepts of this conceptual model interact to influence
health outcomes including health status and suggest direct interaction between all the models concepts (Pender, 1996).

There are two phases that comprise the HPM: (a) a decision-making phase, and (b) an action phase. The decision-making phase involves seven cognitive perceptual elements that constitute motivational mechanisms for acquiring and maintaining health-promoting behaviors as well as five modifying circumstances that indirectly influence patterns of health behavior. The action phase involves obstacles and prompts action, which stimulates activity in health-promoting behavior (Polit & Beck, 2004).

**Individual Characteristics and Experiences**

The first category contains individual characteristics and experiences, which are the unique attributes of the individuals who are being studied that may or may not be relevant to a given behavior. The individual characteristics and experiences category focuses on two areas: prior-related behaviors and personal factors. Prior-related behavior is proposed to have an effect on the likelihood of participating in health-promoting behavior. Concerning to this study, nurse practitioners can help their clients in developing positive behaviors, but their own experience may be attached to that behavior. Their experience with that behavior may or may not have been positive and has great influence on them continuing the behavior.

Personal factors within this category are biologic, psychologic, or sociocultural factors. Race, gender and self-motivation are all described as personal factors. Nurse practitioners' age, education, and experiences with specific health behaviors have great influence on them performing those health behaviors. These personal factors, along with their prior-related behaviors shape who they are and may influence their promoting these behaviors. Both prior-related behaviors and personal factors may have direct or
indirect effects on behavioral outcomes mediated through behavior specific cognitions. Prior-related history and personal factors can be influential behaviors in specific situations (Pender et al., 2002).

Behavior-Specific Cognitions and Affect

The second category of the HPM is behavior-specific cognitions and affect (Pender et al., 2002). This category contains six different areas: (a) perceived benefits of action, (b) perceived barriers to action, (c) perceived self-efficacy, (d) activity-related affect, (e) interpersonal influences, (f) and situational influences. The Health-Promoting Lifestyle Profile II (HPLP II) incorporates all six areas of the behavior-specific cognitions and affect category into its statements.

1. Perceived benefits of action: Perceived benefits of action are defined as indirect or direct motivational behavior, which determine the extent of commitment to the plan by the patient (Pender et al., 2002). In reference to this study, nurse practitioners’ participation in health-related behaviors rests heavily on the perceived benefits of the action. These benefits can be extrinsic e.g., weight loss and later be intrinsic, e.g., increased energy level.

2. Perceived barriers of action: Perceived barriers of action are defined as the patient’s anticipated barriers to health-promoting behavior (Pender et al., 2002). Examples of perceived barriers include time restrictions, fatigue and job requirements can be viewed by NPs as barriers to participating in health-related behaviors. Pender states that if readiness to act is low and barriers to action are perceived high, the less likely the health related behavior will occur (Pender et al.).
3. **Perceived Self-efficacy:** Perceived self-efficacy is defined as judgment of personal capability to create, organize, or complete a particular action (Pender et al., 2002). According to the researcher of this study, nurse practitioners must identify their own desire to participate in positive health related behaviors. They must also identify their skills and how they can use these skills in selected behaviors. When individuals feel efficacious, they are more likely to engage in desired behavior.

4. **Activity-related affect:** Activity-related affect is described as the subjective feelings that happened prior to, during, and following the activity (Pender et al., 2002). The overall feeling one gets from a behavior has great influence whether the individual will participate in the behavior again. Emotional arousal to act, self-acting, and the environment in which the action takes place are three components of activity-related affects. According to the researcher, nurse practitioners and other individuals must be aware of those behaviors that have positive feelings and disregard those with negative feelings.

5. **Interpersonal influences:** Interpersonal influences are defined as the concerns that an individual has about others' feelings, beliefs, and attitudes (Pender et al., 2002). Examples of interpersonal influences include peers, health care providers, and society. The researcher of this study sees nurse practitioners as being very influential over individuals, due to the knowledge they possess. Modeling has been shown to have an affect on one's likelihood to partake in a health behavior. Modeling is very effective in promoting
health-related behaviors because individuals see benefits from a specific behavior.

6. *Situational influences*: Situational influences are described as personal perceptions about a situation that promoted or impeded behavior (Pender et al., 2002). Availability of options, requirements for action, and stimulating environments all constitute situational influences on health-related behaviors. According to the researcher, nurse practitioners must expose themselves to environments that are fascinating and interesting, which encourage them to participate in healthy behaviors.

*Behavioral Outcomes*

Behavioral outcomes comprise the third category of the HPM, which is influenced by the relationship between individual characteristics and experiences and behavior-specific cognitions and affect. Behavioral outcomes include commitment to a plan of action, immediate competing demands and preferences, and health-promoting behavior. Commitment to a plan propels an individual into a desired health-related behavior. It takes a high degree of self-control while in the presence of immediate competing demands and preferences. Immediate competing demands are alternative or unanticipated behaviors over which an individual has little or no control (Pender, 1996). The researcher feels that nurse practitioners must develop a commitment to their clients that they will guide them to an optimal state of health. They must also make a commitment to themselves that they will work to get themselves to an optimal state of health. This not only benefits NPs, but also their clients.

Once a commitment to a plan is established, the use of strategies and self control on other demands the endpoint or action outcome is a positive health behavior.
These behaviors are influenced by a commitment to a plan of action and by immediate competing demands. Pender (1996) defines health-promoting behaviors as patterns of self-initiated actions and perceptions, which serve to maintain wellness, self-actualization, and fulfillment of the individual. Health-promoting behaviors include stress management, spiritual growth, physical activity, nutrition, interpersonal relationships, and responsibility of own health.

Health Outcomes

Health outcomes are the last category or the final product of practicing health-promoting behaviors (Pender, 1996). Health outcomes are influenced by the relationship between individual characteristics and experiences and behavior-specific cognitions and affect. Health is about the continual process of maximizing strengths of individuals and responding in a positive way to challenges they may face. Nurse practitioners and other individuals who have reached the point of health outcomes must continue to work on maintaining these positive health behaviors.

Health Promotion Model: Implications for Health-Related Behaviors

The HPM provides a framework for understanding the numerous influences that affect a person as he/she seeks an improved state of health. The HPM illustrates that each person is a multidimensional holistic individual who continually interacts with both interpersonal and physical environments. The HPM is based on seven assumptions, three of these assumptions relate to the present study: (a) individuals seek to actively regulate their own behaviors, (b) health professional constitute a part of the interpersonal environment and exert influence on persons throughout their life span, (c) and self-
initiated reconfiguration of person environment interactive patterns is essential to behavior change (Pender, 1996).

The HPM has several components. This study focuses on three of these components: (a) interpersonal influences, (b) perceived benefits to action, and (c) perceived barriers to action. Interpersonal influences such as those from health care providers can have both a positive and negative influence on health related behaviors of their clients. With the positive support and reinforcement from NPs, clients are more likely to participate in desired health related behaviors. Perceived benefits and barriers to action represent individual feelings one has towards the health-promoting behaviors. These actions serves as a guide to explore the perceptions of NPs' own health related behaviors. In this study, HLC is researched to identify if it is a barrier or benefit to health related behaviors.

Review of Literature

There are several studies that describe the health-related behaviors of nurses and a few that have studied the health beliefs of nurses. Few studies have found a relationship between these two variables. Such studies can reveal issues that can guide the efforts of nurses to improve their own health, and that of their clients. Nurses have a crucial role in promoting health and preventing illness. Through a critical analysis of the literature, several health beliefs and health-related behaviors on areas of health, including regular exercise, stress, smoking cessation, and diet will be discussed.
Nurses' Perceived Role in Health Promotion

Many health care providers including nurses recognize the need and importance of counseling individuals on health behaviors, but research has confirmed that such counseling is delivered at an extremely low rate (Wee, McCarthy, Davis & Phillips, 1999). Reasons for such a low rate of health behavior counseling include limited time during patient visits, lack of reimbursement for counseling services, lack of counseling skills on the topic, and patient's noncompliance. What is less known is the influence providers' own health behaviors have when counseling their patients on health behaviors.

Vickers, Kircher, Smith, Petersen and Rasmussen (2007) conducted a study to identify variables linked to primary care providers' perceptions of their health behavior counseling. The study also looked at the providers' confidence in their counseling abilities in areas of health including body mass index, exercise frequency, healthy eating, and smoking status. Surveys were mailed to 185 primary care providers. The surveys contained self-report items that assessed rate of health behavior counseling, perceived importance of counseling, extent of counseling training, confidence in counseling abilities, and clinicians personal health behaviors. Of the 185 surveys, 152 were returned, but only 100 were returned completed resulting in a 54% response rate. The participants' self-reported rate of health behavior counseling (% of patients counseled) was $M = 72.50$, $SD = 25.07$, $R = 30$, $p < .001$). Physicians ($p < .001$) and those with more extensive training in health behavior counseling ($M = 5.17$, $SD = 1.79$, $R = .31$, $p < .001$) reported higher rates of counseling. Participants who rated their confidence in counseling abilities ($M = 7.15$, $SD = 1.26$, $p < .02$) also reported more
years in clinical training \( p < .58 \), more extensive training in counseling \( p < .01 \), and greater perceived importance of counseling \( p < .02 \) (Vickers et al.).

A similar study was conducted by Connolly et al. (1997). The purpose of this descriptive study was to explore critical care nurses' responses to three questions about their daily health practices: (a) What are critical care nurses doing currently to stay healthy? (b) Do they anticipate making any changes in their lifestyle in the future? and (c) Would they recommend their lifestyle to their patients? One hundred twenty-seven critical care nurses present at a Midwestern critical care conference were approached to complete a two-part questionnaire. The first part of the questionnaire had three open-ended questions: (a) what the critical care nurses were currently doing to stay healthy, (b) whether they were contemplating changing their lifestyles, and (c) whether they would recommend their lifestyles to their patients. The second portion of the survey requested information on the participants' personal health history, family health history, physical activity, diet, smoking habits, blood pressure, cholesterol levels, height and weight. An additional 23 nurses were interviewed via video camera.

Health problems of participants included obesity \( n = 15 \), arthritis \( n = 10 \), and hypertension \( n = 8 \). Participants' most frequently responded that they stay healthy by engaging in exercise \( n = 97 \), 76% and following a healthy low-fat diet \( n = 93 \), 73%. Seven-one percent of participants anticipated making changes in their lifestyles in the future, including biking or walking to work, decreasing stress, and making modifications in their diets. Seventy percent of nurse participants reported that they would recommend their lifestyles to their patients because they watched their weight and their diet.
Among the 23 participants who were interviewed via video camera, five themes emerged: (a) heart-healthy practices predominate the responses, (b) incorporating a healthy lifestyle was easy for some and a struggle for others, (c) critical care nurses readily listed barriers to healthy living, (d) the nurses had a positive attitude about their healthy lifestyles and felt optimistic about being role models for their patients; and (e) future plans were either singular in focus or limited to maintenance of current health status (Connolly et al., 1997).

Both of these studies have clinical implications for the nursing profession. It is concluded that nurses need to examine their personal health behaviors and the degree to which modeling those behaviors may influence educating their patients/clients about health promotion. Being a role model is the individual choice of nurses; however they must understand what their role is and what is expected of them (Borchardt, 2000).

**Health-Related Behaviors**

Health promotion research has been expanded as researchers have increased their scope of interest on the topic. Research has been conducted among many different groups of people based on their gender, age, race, education, and income that address factors influencing health related behaviors. Yet there are few studies that explore factors that influence the health-related behaviors of nurses.

Weitzel (1989) studied health-promoting behaviors of 179 blue collar workers employed by a university. In this study, age explained 3% of the variance in health responsibility \( (p = .01) \), 6% of exercise scores \( (p < .001) \), and 10% of variance in nutrition scores \( (p < .001) \). Level of participation in physical activity, one dimension in health-promoting behaviors, was examined in a convenience sample of 325 male utility
employees. In the study the most powerful predictor of health-promoting behavior was self-efficacy ($p < .13$).

Lookinland and Harms (1996) studied the health-promoting behaviors of older adults between the ages of 64 and 96 who participated in an exercise program ($n = 85$) and those who were not in an exercise program ($n = 70$). Participants had a mean age of 77 and were predominantly female (73%), had middle income (63%), and were well educated (96%). The theoretical framework for this study was Pender's HPM. The two instruments used included a demographic data survey and the HPLP. Relationships among all subscale scores were significant with the strongest relationship between spiritual growth and interpersonal relations ($r = .761$, $p < .01$). The highest subscale score was for health responsibility and the lowest for physical activity. The mean benefits score was 87.96 (SD = 14.08). Ten of the 20 items relating specifically to the benefits of exercise were totaled to create an exercise benefits subscale.

Multiple regression equations were calculated to examine variance in health-promoting behaviors explained by components of the HPM. Results revealed that 66% of the variance in overall health-promoting behaviors was explained by age, education, income, self-reported health, total self-efficacy, benefits and barriers to health-promoting behaviors ($[R.sup.2] = .663$, $df = 12$, $p < .001$). Separate multiple regression equations were created with physical activity and nutrition as the dependent variables. For physical activity, 65% of the variance was accounted for by age, education, income, self-reported health, exercise self-efficacy, benefits of exercise, and barriers ($[R.sup.2] = .650$, $df = 12$, $p < .001$). For nutrition, 52% of the variance was due to age, education, income, self-rated health, self-efficacy for healthy eating, barriers, and benefits of healthy nutrition ($[R.sup.2] = .524$, $df = 12$, $p < .001$).
Correlation coefficients were calculated to explore the relationship between personal factors and health-promoting behaviors. Advancing age was associated with better scores of stress management ($r = .229$, $p < .01$) and health responsibility ($r = .204$, $p < .01$). Associations with age and total health-promoting behavior score were not significant. There was a significant positive correlation between education and total health-promoting behaviors ($r = .245$, $p < .01$) as well as income and health-promoting behaviors ($r = .164$, $p < .05$) (Lookinland & Harms, 1996).

Kotecki’s (2004) study attempted to describe and explain urban women’s perceptions of health and health-related behaviors. The study utilized Pender’s HPM as a conceptual framework (Pender; 1996). The descriptive design utilized both a qualitative and quantitative design. The sample of 85 women was drawn from a population of 296 employees and parents at two Head Start organizations operating in primarily urban community in the Northeast. Seventy-one women met the study criteria of working or living in an urban area. The HPLP II and the Community Health Services Survey (CHSS) were used in this study. The CHSS contained demographic data and questions about health needs and was developed by the researcher. Subjective data collection was accomplished through the use of a researcher-developed guided interview, which contained 10 questions. Women employees and parents were approached at an education day for Head Start and had the research study explained to them. Consent was obtained and those willing to participate filled out the study materials. Six women associated with one Head Start center were approached and consented to be interviewed. Interviews were held in a private room at the center, utilized open-ended questions, and lasted approximately 1 hour. All interviews were audiotaped and were transcribed by a research assistant.
The sample ranged in age from 18 to 63 years with a mean age of 34 years (SD = 11). The subjects were well educated: 13 (18%) were high school graduates, 24 (34%) had attended college and 20 (28%) held a college degree. Ninety-two percent (n = 65) of subjects were employed in the urban environment and 62% (n = 44) lived in the urban area. Subjects were primarily Black (68%, n = 48) or Hispanic (21%, n = 15). On the 4-point HPLP II Likert scale where the subject could select a response of 1 (never), 2 (sometimes), 3 (often), and 4 (routinely), the mean score for the subjects was 2.47 (SD = 0.32) indicating that they sometimes too often engaged in health-promoting practices. The subscale with the highest mean was the spiritual growth subscale, (M = 2.92, SD = .47), indicating that subjects selected spiritual practices to promote health more regularly than other health-promoting practices. In descending order, the scales ranked as follows: interpersonal relations (M = 2.81, SD = 0.41), health responsibility (M = 2.48, SD = 0.44), stress management (M = 2.31, SD .49), nutrition (M = 2.27, SD 0.44), and physical activity (M = 2.00, SD = .05). Five themes emerged from the data: (a) What's affecting my health: health concerns; (b) not taking care of my health; (c) using cultural health practices; (d) depending on God; and (e) moving toward better health. These themes included elements of the HPLP II, as women shared their health concerns, problems and behaviors. The spiritual aspect of health emerged as a strong component of urban women's lives as evidenced by HPLP II scores and interviews.

In both studies personal factors, such as age, gender, race, and education influenced the health-related behaviors of participants. Nurses and other health care providers can utilize this information to understand potential barriers in health promotion counseling. They must also understand that it is just as important to acknowledge their
own health beliefs and health related behaviors, role modeling healthy lifestyle practices including physical activity, stress management, smoking cessation, and nutrition. The following literature review discusses health care providers role in these four health related behaviors.

**Physical Activity**

McDowell, McKenna and Naylor (1997) examined the promotion of physical activity by general practitioners (GPs) and practice nurses (PNs). A questionnaire was mailed to 846 participants examining the types of barriers to physical activity and the levels of their influence as well as stage of change for activity promotion and for personal behavior. Return rate was 592 (70%) in each group with a high proportion (69%) of GPs and PNs reporting that they regularly promoted physical activity with their patients.

General practitioners were found less likely to regularly promote physical activity when counseling their patients indicating a lack of time as a barrier (odds ratio [OR] = 0.73, 95% confidence interval [CI] 0.58 to 0.93) or lack of incentives (OR = 0.74, 95% CI 0.59 to 0.94). They were more likely to promote exercise if they participated in regular exercise (OR = 3.19, 95% CI 1.96 to 5.18). For PNs, having more time for counseling (by 1.5 to 2 minutes) had a higher likelihood of producing regular promotion of activity (OR = 1.61, 95% CI 1.02 to 1.62). Practice nurses' personal physical activity stage was the strongest predictor of promotion level, but with a stronger effect (OR = 4.77, 95% CI 1.48 to 15.35) than in the GPs.

Practice nurse personal characteristics (age, years as a PN, knowledge of coronary heart disease risk factors) did not differ by stage of physical activity promotion. Smoking was the most recognized (98%) of the four main independent risk factors for coronary heart disease, followed by physical inactivity (75%). Only 10% of both groups
correctly identified the four main factors from the choice of six (obesity, diabetes, physical inactivity, smoking, hypertension, and raised cholesterol values). There was a significant difference in the hours of training that the promoting and restricted promoting PNs had received in the past 5 years. The mean (SD) hours of physical activity promotion training for the whole sample was 5.2 (16.1), with 37% (n = 66) of the whole sample having not receiving any formal training. Promoting PNs received more hours of physical activity promotion training than restricted promoting PNs (M = 6.18 hours compared with M = 1.51 hours). Sixty percent of restricted promoting PNs reported having "0" hours of training compared with 30% of the promoting PNs.

The study concluded that GPs in the action or maintenance stage of changing their own physical activity were three times more likely to regularly promote the same behavior in their patients than those in the other stages; PNs were four times more likely to promote physical activity. Professional readiness to change is influenced by known system barriers in GPs, and not in PNs, but is more strongly predicted by personal physical activity behavior in both groups (McDowell et al., 1997).

**Stress Management**

Healy and McKay (2000) examined the relationships between work-related stressors and coping strategies of nurses, and the impact upon nurses' levels of job satisfaction and mood disturbance. A volunteer sample of 129 registered nurses was recruited from Melbourne metropolitan and Victorian regional institutions (Australia). They were surveyed using standardized questionnaires and open-ended questions. The sample consisted of 125 females and 4 males. Questionnaires were distributed to willing participants to complete at home and return. Five standardized questionnaires and a page seeking demographic information were given to the participants. The order
of questionnaires was the same for all respondents. They included the following instruments: (a) the Nursing Stress Scale (NSS), which has 34 items about potential stressful situations; (b) the Ways of Coping Questionnaire (WOCQ), which has 66 items including statements about cognitive and behavioral efforts used to manage a specific stressful event; (c) the Coping Humor Scale (CHS), which has seven items indicative of using humor more often as a coping activity; (d) the Job Satisfaction Scale of the Nurse Stress Index, which has five items requiring responses to statements about work; and (e) the Profile Of Mood States (POMS), which uses a checklist of 37 adjectives to assess mood states.

Scores on the NSS were higher than POMS scores, and lower than job satisfaction scores. Coping humor scores did not correlate significantly with any of the other variables. However, there was a positive relationship \( r = .36, p < .001 \) between escape-avoidance scores with NSS and POMS scores, seeking social support, which involves both emotion and problem-focused coping, was also positively correlated with NSS scores and the other WOCQ scales. Results from the NSS score indicated that workload was the highest perceived stressor in the nurses' working environment. The combined NSS factors accounted for 15% of the variance of POMS scores \( p < 0.001 \).

However, workload was the only significant predictor of mood disturbances. Respondents' scores on the CHS did not have the expected negative correlation with POMS scores \( p < 0.05 \). Therefore, those who used humor more to cope with stressful situations had higher scores on mood disturbance. The combined predictor variables in the CHS analysis accounted for only 9% of the variance \( p < .001 \); no main or buffering effects were found for humor coping upon the relationship between stress and mood disturbance. In the job satisfaction analysis, the combined predictor variables accounted
for 17% of the variance (p < .001). In conclusion, the present study found a positive relationship between job stressors and mood disturbance in this sample of nurses. The study does support previous studies, which found that humor coping buffered the effects of stress upon negative mood states. It would appear that situational factors are important determinants of coping strategies and perceptions of stress and need to be considered in stress research designs (Healy & McKay, 2000).

Smoking Cessation

McEwen and West (2001) randomly surveyed 459 PNs and 303 GPs in England and Wales to assess their behaviors, attitudes and knowledge regarding smoking cessation. Questionnaires were mailed to participants. The authors developed the two instruments used: a 41-item questionnaire based on the UK smoking cessation guidelines for health professionals for the physicians, and a 33-item questionnaire for the nurses. The sample contained 68% males; 40% were between 40 and 49 years of age. Findings in the McEwen and West study reported nurses who were educated in smoking cessation interventions (4.9 (SD = 4.1) were more likely to assist patients to stop smoking than nurses who were not (2.8, SD = 1.8, p < 0.0025). Smoking cessation interventions reported by the participants included counseling, written literature, support groups and encouraging patients to use the country’s telephone support line. Nearly all of the physicians (n = 732) and nurses responding (n = 732, 96%) indicated a unified belief that it was their duty to recommend and help patients quit smoking. The most common type of physician referral (n = 312, 41%) for tobacco intervention was to nurses within the practice who were most likely to provide individual counseling and written material. Very few physician or nurse referrals were made to smoking support groups
(n = 23, 3%). Nurses (2.2, SD = 3.2) were more likely than physicians (1.0, SD = 1.4, p < 0.025) to advise patients to use the telephone support system, advise patients to stop smoking during most or all consultations (71% compared to 50%), and were just as likely to recommend nicotine replacement therapy (74% compared to 78%). These differences were reported to be statistically significant (p ≤ .001). This study indicates the commitment and involvement physicians and nurses in these countries have for tobacco cessation interventions, including nicotine replacement therapy (McEwen & West).

Nutrition

A study conducted by Hankey, Eley, Leslie, Hunter and Lean (2003) addressed knowledge, attitudes, beliefs and eating habits of health professionals regarding obesity, nutrition and weight management. A sample of 2,290 participants—1,400 GPs, 613 PNs, and 360 practicing dietitians (members of the British Dietetic Association) were selected from listings at the Information and Statistics Division in Scotland. A self-complete survey questionnaire, Improving the Nutrition and Care of the Overweight Patient Survey (INCOPS), was mailed to participants. Information was requested on opportunities for audit and perceived skills in relation to weight management. Survey questions included beliefs, attitudes and knowledge about the connection between obesity, nutrition and health. Participants were also asked to complete an eating habits questionnaire, which identified them as healthy or unhealthy eaters, and required participants to share their waist circumference, height and weight.

The overall response rate was 65%. All participants showed a clear understanding of nutrition and health. There was less understanding of obesity as a disease and the positive influence low-energy diets have on weight management. Less
than 10% had carried out audit to determine the incidence of obesity and overweight.
Many of the participants were uncertain about their own effectiveness in delivering
weight management advice. Less than one-third of respondents were categorized as
either overweight or obese. Only 6.9% (n = 78) of all respondents were classified as
unhealthy eaters. Male GPs were more likely to be classified as unhealthy eaters than
were female GPs (15.1% [n = 46] vs. 8.8% [n = 18], p <0.05).

All professions gave similar responses to the general nutrition knowledge
questions concerning fruit in the diabetic diet, and the link between raised plasma
cholesterol concentrations and the likelihood of developing heart disease. More GPs
who had followed clinical guidelines on obesity answered the question regarding plasma
cholesterol and heart disease correctly (p < 0.001). The question whether starchy foods
were fattening was answered incorrectly by 21% of all GPs and more overweight GPs
agreed with the statement (p < 0.05). Beliefs regarding hypertension and salt intake and
the dietary causes of obesity varied significantly by professional group. Most
participants chose the correct answers, but a large proportion did not for the statements:
(a) High sugar intake is a more major cause of obesity than a high fat intake and (b) In
the treatment of hypertension, a low-salt diet is indicated routinely. A majority of
respondents agreed with the statement: Some overweight patients can live on 800
to 1200 kcal/day without losing weight, only slightly more dietitians disagreed than
agreed. Practice nurses who followed obesity guideline were more likely to disagree
with the statement (p < 0.05) while GPs with a raised body mass index (BMI) were more
likely to agree with the statement (p < 0.01).

Those GPs who followed clinical obesity guidelines were more likely to recognize
the value of physical activity in preventing weight gain (p < 0.01). The majority of
participants understood the medical consequences of overweight and obesity. Reported beliefs about the consequences of weight gain on sleep disturbances, incontinence, and psychological problems showed significant between group differences. General practitioners showed most agreement with the statements: (a) Increasing body weight leads to increasing psychological problems; and (b) If overweight, sufferers of urinary incontinence should reduce their body weight. They showed disagreement with the statement: There is no relationship between overweight and sleep disturbances. Practice nurses and GPs with a healthy BMI were more likely than their overweight colleagues to know that obesity can cause disturbed sleep (p < 0.01 and p < 0.05).

Three conclusions were developed from this study: (a) General practitioners should offer advice to their patients who are overweight, (b) There should be specialist posts for dietitians in weight management, and (c) Specially trained nurses are valuable in providing weight-reduction diets for patients. Practice nurses were more likely than those who had not to support the idea of training of specialist dietitians for weight management (p < 0.001). They also agreed with the statement that GPs should provide weight management advice to patients with raised BMI (p < 0.05). This study confirmed that the majority GPs, PNs, and registered dietitians were knowledgeable about nutrition, obesity and weight management, but were unclear how to deliver effective weight management advice.

Health Locus of Control

Health Locus of Control (HLC) is defined as one's belief that the state of one's health is determined by internal or external factors, as well as, the level of perceived control over desired outcomes. The importance of health belief and, in particular, HLC,
in mediating health behaviors is often overlooked. It is not enough for health care providers to consider the health beliefs of patients, but the beliefs of health professionals must also be investigated. The following studies address the influence of HLC on health behaviors.

Schank and Lawrence (1993) studied the relationship of health-promoting lifestyle practices between nursing and non-nursing students. They also wanted to find if a relationship existed between reported health-promoting lifestyle practices and HLC among the participants. The sample included 76 young women attending a women's health course at a large Midwestern university. The women were junior and senior college students, 38 nursing students and 38 non-nursing students. The mean age of participants was 24.5 years, with range of 19 to 45 years.

Subjects were administered the instruments used in the study during the last class of their women's health course. Participants were given Form B of the MHLCS (Wallston et al., 1978), which measured three dimensions internal locus of control, powerful others locus of control and chance locus of control. They were also given the health appraisal instrument developed by the researchers containing 46 data gathering items, including five demographic categories. The Personal Lifestyle Questionnaire and the Health Promotion Lifestyle were also administered to subjects. The health-promoting lifestyle practices studied were physical examination, dental examination, immunizations, pelvic examination, breast self-examination, seat-belt use, drinking and driving, physical activity, alcohol intake, illegal drug use, smoking, sleep patterns, breakfast patterns, four food groups, and junk food intake.

Findings revealed a significant difference ($p < .0001$) between reported lifestyle practices and career choices of young adult women. The nursing students ($n = 38$) had
healthier lifestyle practices than the non-nursing students (n = 38). The possible range of lifestyle practice scores was from 16 (most positive practices) to 50 (least positive practices). The non-nurse group scores ranged from 19 to 36, with a mean of 27.18 (SD = 3.59), and the nurse group ranged from 20 to 33, with a mean of 25.10 (SD = 3.343. The lifestyle practice area with the most notable differences included frequency of alcohol intake, illegal drug use, frequency of junk-food intake, hours of sleep per night, and use of seat belts. The nursing group reported more positive lifestyle practices.

No relationship was found between participants' HLC and their lifestyle practices. The mean MHLC subscales for the total sample were internal (28.18), powerful others (17.89), and chance (15.42). These means are close to the means of 26-60, 18-30 and 15-0 established by Wallston and Wallston (1982). Analysis revealed that all eight types of HLC were present among participants. The eight categories were: pure internal (high I and low P and C), pure powerful (high P and low I and C), pure chance. Most nurses were found to be pure internals, whereas most non-nurses (26%) were found in the double external category. The pure chance category had only 6% nurses and 3% non-nurses.

This study found a significant difference between nursing and non-nursing respondents and reported lifestyle practices. Nursing students recognized positive health care factors and therefore self-reported these lifestyle patterns. Another interesting finding in this study was the difference between nurses and non-nurses in several HLOC subcategories, nurses being more pure internal and non-nurses being more double external. This, too, may reflect the curriculum influence, with nurses seeing how much they can or need to do for themselves to maintain health versus looking to
others, including other health care professionals, whereas, non-nurses may view medicine and health care professionals as the experts whose responsibility it is to provide health care and prevent disease.

A similar study was conducted by Mellilo, Futrell, Williamson, Ehamberlain, Bourque, MacDonnell and Phaneuf (1996). The researchers in this study attempted to indentify predictors of health promotion activities in elderly couples. The mean age was 73 years. Most participants were White (n = 55); four were Black. Thirty-six percent of the sample had less than a high school education. The couples were selected from three senior centers in Rhode Island. Instruments selected for the study included the HPLP, Norton’s Quality of Marriage Index, the Perceived Social Support from Family Measure, the MHLC, and a single-item subjective measure of perceived health status.

Results of the study found education and income were closely connected, and income was deleted from the regression analysis. Value of health, gender, and spousal influence were not predictors of health-promoting behaviors. Perceived health status, educational level, relationship quality, social support, and internal HLC were found to be predictors in explaining the 33% variation in health-promoting practices.

Summary

The literature review covered nurses’ perceived role in health promotion; health-related behaviors including nutrition, stress management, physical activity, and smoking cessation; and HLC. The studies discussed indicated that health-promoting behaviors and health beliefs were influenced by many factors including age, education, and income. Other influencing factors were individual’s perception of health and their control over their health, which was identified as HLC. These studies are very influential to NPs
and other health care providers because they provide great insight on the relationship between health beliefs and health-related behaviors. The studies also bring awareness to health care providers regarding the influence their own health beliefs and health-related behaviors have on their patients.
CHAPTER III

METHODOLOGY

Introduction

The purpose of this study was to explore the relationship health locus of control and health-related behaviors of NPs. Health care providers including NPs have very influential roles in regards to their clients' health-related behaviors. It is important for these professionals to understand that their own health beliefs and behaviors have a large impact on their patients. In this chapter the research design, sample, setting, data collection instruments and procedures, and data analysis will be presented.

Design of Study

The design selected for this study was descriptive-correlational. This design was appropriate for this study in order to find a relationship between health-related behaviors and health locus of control rather than determine causality. The variables were measured at a single point in time, which made the design the most expedient and economical to explain the relationship between variables. The quantitative data were obtained through the use of three instruments that were compiled into questionnaires. All three instruments were mailed to participants.

Setting and Sampling

The target population was defined as all masters-prepared NPs living in Wisconsin. A systematic sampling of NPs who were members of the Wisconsin Advanced Practice Nurses Association (WAPNA) was selected for this study. Criteria
for sample selection included Wisconsin NPs having master's degrees, and were members of the WAPNA.

Data Collection Instruments

Data collection was through the use of three instruments including a demographic survey developed by the researcher, the MHLC questionnaire (Form A) developed by Wallston, Wallston, Kaplan and Maides (1976), and the HPLPII developed by Walker, Sechrist and Pender (1995).

Demographic Data Profile

The first questionnaire contained demographic data information (Appendix A). Participants were asked to indicate their age, gender, years in nursing, and specialty area. Age and gender were measured through self-report in items one and two of the demographic data survey. Area of specialty was item three on the demographic data survey and asked participants select their area from a list including acute care, adult health, geriatrics, psychiatry, pediatrics, women's/obstetrical-gynecological, and other. Years of experience were measured in item four of the demographic data survey and participants were asked to identify years within several different ranges including 0 to 4, 5 to 9, 10 to 14, 15 to 19, 20 to 24, 25 to 29, and over 30 (Table 1).
Table 1

Descriptive Statistics of Sample Characteristics

(N = 59)

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<thead>
<tr>
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Multidimensional Health Locus of Control (Form A)

The second questionnaire used in the study was the MHLC Form A (Appendix B). The MHLC was composed of three subscales: internality, powerful others, and chance. There are a total of 18 items, each of which is rated on a 6-point scale from
strongly disagree to strongly agree. Six items contribute to the internal locus of control scale (e.g., I can remain healthy by taking care of myself.); six to the powerful others scale (e.g., Following doctor's orders to the letter is the best way for me to stay healthy.); and six to the chance locus of control scale (e.g., When I become ill, it's a matter of fate.) The possible range of scores for each subscale is 6 to 36, with higher scores indicating a greater belief in internal, others, or chance control over health. All participants received a score for each of the three subscales by adding together the number of each response from 1 to 6. The subscale with the highest score confirmed their primary health locus of control.

Health Promotion Lifestyle Profile II

The third survey used to collect data was HPLP II developed by Walker et al. (1995). The HPLP II measured six aspects of health-promotion behaviors: health responsibility, physical activity, nutrition, spiritual growth, interpersonal relations, and stress management (Appendix C). The HPLP II instrument contains 48 items divided into six subscales: self-actualization, health responsibility, exercises, nutrition, interpersonal support, and stress management. Responses for the items are never (N), sometimes (S), often (O), and routinely (R)). A principal axis factor analysis supported the presence of the six factors used as subscales (Walker et al.). The higher the score for each subscale, the more often the individual participated in the behavior. Previously reported internal consistency of the subscales ranged from .702 to .904, with an alpha of .922 on the total scale based on the response of 952 adults in Midwestern communities and has been used with other populations since. Test-retest reliability based on a sample of 63, at a 2-week interval, yielded a Pearson r of .926 for the total scale, and ranged from .808 to .905 for the subscale.
Data Collection Procedure

Approval was received from the University of Wisconsin Oshkosh Internal Review Board (Appendix D). One hundred NPs were randomly selected from a list of 433 nurse practitioners belonging to the WAPNA. Using sampling interval of three, every third name was selected from the WAPNA directory for a total of 100 names. Those selected were sent three instruments including the HPLP, MHLC, and a demographic data survey. A letter explaining the purpose of the study and consent form was sent included with the instruments (Appendix E). Returned tools and demographic surveys were identified by the researcher as consent to participate.

Data Analysis

Data were coded and were entered into the SPSS data base file for descriptive-correlational analysis. Form A of the MHLC was used to answer the first research question: What is the health locus of control of nurse practitioner? Each participant received three scores, one from each of the three subscales.

The HPLP II was used to answer the second research question: “What are the health-related behaviors of NPs? Data from the HPLP II were reported as the mean total score, and the mean score on each subscale. Based on Pender’s instructions, an overall health-promoting lifestyle score was given to participants by calculating a mean of the participants’ responses to the 52 questions on the instrument. Scores for the six subscales were also obtained by calculating the participants’ responses to the subscales and then dividing the number by the items included in that subscale.
Summary

A descriptive, non-experimental, correlational design was selected for this study. A systematic sampling method was also used to select 100 NPs living in Wisconsin for a desired sample of 83. University of Wisconsin Oshkosh IRB approval was received prior to the initiation of the study. The three instruments used to obtain information regarding HLC and health-related behaviors of NPs included the HPLP II, MHLC, and a demographic data survey. Using the information from these tools, relationships between the variables in the study were reviewed.
CHAPTER IV
FINDINGS AND DISCUSSION

Introduction

The purpose of this study was to investigate the relationship between health locus of control and health-related behaviors of NPs. A discussion of the findings related to each of the three research questions is presented in this chapter.

Sample

Three instruments including the HPLP II, MHLC, and a researcher-developed demographic survey were mailed to 100 NPs. Health-related behaviors in this study were measured using the 48-item HPLP II (Pender, Murdaugh & Parsons, 2002). The HPLP is composed of six subscales: stress management, interpersonal relationships, health responsibility, self-actualization, nutrition, and exercise. Health locus of control was measured using Wallston and Wallston’s (1981; Wallston et al., 1978) 18-item MHLC Form A. This measure contains three 6-item scales measuring dimensions of internal health locus of control (IHLC), powerful others (PHLC), and chance externality (CHLC). The IHLC consists of questions concerning how strongly individuals feel they are in control of their health status (e.g., If I take care of myself, I can avoid illness.).

A total of 59 NPs belonging to the WNAPA returned the completed surveys for a response rate of 59%. The sample included 58 females and 1 male with a mean age of 49.8 years. Participants ranged in age from 31 years to 69 years of age. A total of 54 NPs were between the ages of 30 and 50 (91.5%). Of the 59 participants, 46 (78%) had
been NPs between 5 to 30 years. The two areas of specialty with the highest number of participants included women's/obstetrical-gynecological (16.9%) and family practice (33.9%). A total of six participants selected two areas of specialty.

Research Question One: What Is HLC of NPs?

The MHLC was utilized in this study to answer research question one: What is the HLC of NPs? It is not enough to consider the health beliefs of patients alone; the beliefs of health professionals must also be explored. Participants were asked to complete the MHLC Form A and the results were used to determine how NPs view certain health-related issues. The participants indicated on a 6-point Likert scale the extent to which they agreed or disagreed with the 18 questions identified on the instrument. The MHLC has three 6-item scales measuring dimensions of IHLC, PHLC, and CHLC.

Participants in this study scored the highest in the IHLC subscale (\( M = 27.08 \) and \( SD = 4.01 \)). The IHLC is the tendency to perceive responsibility for one's health to lie with the individual. The CHLC subscale—the perception of one's state of health being strongly affected by chance or fate (\( M = 14.88 \) and \( SD = 4.24 \)) and the PHLC subscale—the tendency to perceive one's health to be related to actions of powerful others such as doctors, nurses, and family (\( M = 13.98 \) and \( SD = 4.4 \)) were scored significantly lower by participants. The CHLC subscale and PHLC (\( p = 0.05 \)) showed a significant correlation. The IHLC and PHLC had little correlation (\( p = 0.049 \)). The IHLC and CHLC correlation was \( p = 0.332 \), which had no significance.

Having an IHLC can be very empowering. Those with IHLC do not just wait for life to happen; they go out and do it. This type of locus of control can impact
relationships, work life, and lifestyle choices. It is not only about the big decisions but the small, everyday decisions. Taking control and therefore responsibility of for ones' life can increase self-worth and happiness. In this study participants were found to score higher on IHLC. Nurse practitioners are seen as role models and leaders concerning health. They are also viewed as having great influence on their clients' optimal health. For these reasons, NPs may feel it is necessary to have control over their own health because they have a responsibility to have positional control over the health of others.

A study by Rozmus, Evans, Wysochansky and Mixon (2005) described health promotion and risk behaviors of entering college students in a rural southern setting. The MHLC Survey was utilized in this study and concluded that students believed they were in control of their health (internal locus of control) and that their personal health behaviors were responsible for their health. The HPLP II survey was also used in the study. The results of the HPLP II in this study indicated that spiritual growth and interpersonal relationships highly influence the student's decision-making process. A similar study by Eachus (1991) found that compared to those persons with external locus of control, those with internal IHLC are more competent. The researchers also concluded that participants in the study were effective people who were more likely to take responsibility of their actions and have great influence on persuading others to do the same. These two studies relate to the present study and show that those with IHLC take responsibility for their health and are more likely to make necessary changes if needed to achieve control.
Research Question Two: What Are the Health-Related Behaviors of NPs?

The second question was measured using the HPLP II. The HPLPII consists of 52 items (specific health behaviors), which represent major components of a healthy pattern of living. Six-sub scales (self-actualization, health responsibility, exercise, nutrition, interpersonal support, and stress management) consisting of eight to nine items each are represented in the instrument. Mean scores are calculated for the total scale and each of the subscales to reveal an individual's engagement in these health-promoting activities in the activities reflecting strengths, resources, and area for future growth. Cronbach alpha for the HPLP was .87 for this sample.

Table 2 contains the means, range, and standard deviations for the composite HPLP II score, and each category of the HPLP II. Participants in this study scored the in highest spiritual growth with (M = 3.27, SD = .573), closely followed by interpersonal relationship with (M = 3.24, SD = .516). Nutrition was also fairly high, while physical activity (M = 2.72, SD = .664) and stress management (M = 2.75, SD = .572) received lower scores. The NPs scored the lowest in health responsibility. The overall composite score for the HPLPII in this study (M = 2.97, SD = .413) indicates that participants "sometimes" rather than "often" or "routinely" practiced healthy lifestyles behaviors. These findings were relatively surprising to the researcher. It was believed that NPs would score higher in the subscales of health responsibility, stress management, and physical activity. Just the opposite occurred and they scored higher in areas that would appear to have great influence from others. Spiritual growth and interpersonal relationships are both subscales that reflect input from others. This appears to contradict the participants' revelation that they have an IHLC. Although, participants
may have control over their health, it is important for them to search beyond themselves and gain support from others.

Table 2

*Descriptive Statistics of the HPLP II Subscales*

\[
\begin{array}{ccc}
\text{Variables} & \text{Mean} & \text{Standard Deviation} & \text{Range} \\
\hline
\text{HPLP composite score} & 2.97 & .41 & 1.92 - 3.81 \\
\text{Health responsibility} & 2.62 & .59 & 1.22 - 4.00 \\
\text{Physical activity} & 2.72 & .66 & 1.25 - 4.00 \\
\text{Nutrition} & 3.17 & .38 & 2.00 - 4.00 \\
\text{Spiritual growth} & 3.27 & .57 & 1.56 - 4.00 \\
\text{Interpersonal relationships} & 3.24 & .52 & 2.00 - 4.00 \\
\text{Stress management} & 2.75 & .57 & 1.38 - 4.00 \\
\end{array}
\]

Similar findings were reported in a study by Kotecki (2004). The purpose of this study was to describe and explain urban women's perceptions of health and health-related behaviors. A convenience sample of 85 women was drawn from a population of 296 employees and parents at two Head Start organizations operating in a primarily urban community in the northeast. Seventy-one women met the study criteria of working or living in an urban area. Instruments included the HPLP II and the Community Health Services Survey (CHSS). The mean score on the HPLP II for the subjects was 2.47 (SD = 0.32) indicating that participants sometimes too often engaged in health-promoting practices. The subscale with the highest mean was the spiritual growth subscale (M = 2.92, SD = 0.47) indicating that subjects selected spiritual practices to promote health more regularly than other health-promoting practices. In descending order the scales ranked as follows: interpersonal relations (M = 2.81, SD = 0.41), health
responsibility (M = 2.48 SD = 0.44), stress management (M = 2.31, SD = 0.49), nutrition (M = 2.27, SD = 0.44), and physical activity (M = 2.00, SD = 0.05).

Trevelyan and Cullen (1989) studied the health behaviors of nurses and found that nurses exercised less often than they believed they should. Even though they exercised less, they participated in exercise more than the national average (46% of nurses indicating participation in daily activity). Soeken, Bausell, Winklestein and Carson (1989) studied the health behaviors of student nurses. They concluded that student nurses participated in exercise infrequently—below the national average.

These studies support the results of the current study and confirm that NPs search the support of others. The studies also confirm that NPs are less involved in health behaviors such as exercise, nutrition, and health responsibility. These behaviors are essential in optimizing health and should be promoted by NPs when counseling their patients. If they are not participating in these behaviors, are they encouraging their clients to participate? Further research must be done to determine why NPs do not participate in these behaviors to the same degree as the other behaviors.

Research Question Three: What Is the Relationship Between HLC and Health-Related Behaviors of NPs?

Pearson product moment correlations were used to examine the relationship between the MHLC and the HPLP II surveys completed by participants. The correlations between the subscales were also examined (Table 3). The subscales of interpersonal relations (r = 2.00, p < .026) and stress management (r = 2.63, p < .013) from the HPLP II showed a significant positive correlation with the IHLC subscale from the MHLC. Components of interpersonal relations include maintaining meaningful and
### Table 3

**Pearson Correlation Between Multidimensional Health Locus of Control Tool, Health Promotion Lifestyle Profile, and the Subscales of Both Tools**

<table>
<thead>
<tr>
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<th>Health-Promoting Lifestyle</th>
<th>Internal</th>
<th>Chance</th>
<th>Powerful Others</th>
<th>Health Responsibility</th>
<th>Physical Activity</th>
<th>Nutrition</th>
<th>Spiritual Growth</th>
<th>Interpersonal Relations</th>
<th>Stress Management</th>
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<td><strong>Pearson Corr</strong></td>
<td><strong>Sig (2-tailed)</strong></td>
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**Correlation is significant at the 0.01 level (2-tailed).**

* Correlation is significant at the 0.05 level (2-tailed).
fulfilling relationships with others, spending time with close friends, and find it easy to 
show concern, love, and warmth to others. Components of stress management include 
getting enough sleep, taking sometime for relaxation each day, and accepting those 
things in life that cannot be changed. Nurse practitioners in the study identified 
interpersonal relations and stress management as having a significant positive 
relationship. According to a study by MacArthur and MacArthur (1999), having a sense 
of control such as that experienced by those with internal locus of control led to 
 improved emotional and mental health, reduced risk of heart disease, better self-rated 
health status, and lower stress related morbidities. Individually the subscale of stress 
management scored relatively low on the HPLP (M=2.75), but had a high correlation (r = 
2.00, p < .031) with IHLC.

This study closely relates to the present study because it supports the idea that 
those with IHLC participate in stress management behaviors and have control over their 
emotional and mental health, which in return gives them an improved level of health. 
Although NPs don’t routinely participate in nutrition or physical activity behaviors, they 
still have a better self-rated level of health.

Unlike the subscale of stress management, the subscale of nutrition scored high 
(M=3.17, SD = .377) individually on the HPLP and had a low correlation with IHLC (r = 
.25, p < .057). Components of the nutrition subscale include limiting use of sugars and 
food containing sugar, eat 6 to 11 servings of bread, cereal, rice, and pasta each day, 
and eat two to four servings of fruit each day. In a study by Snyder (2006), a positive 
association (r = .34, p < .025) was found between chance health locus of control and 
noncompliance with diet programs. The participants in the study were involved in a 
weight loss program and their HLC was measured using the MHLIC. The researchers
found that this belief about chance was inversely related to health status and also inversely related to knowledge about health problems. It was concluded in this study that those who believed health was by chance found being compliant with a weight loss program was not necessary. These results are different than those found by Duffy (1988), who found that women in the middle of their life who scored on IHLC scored high on nutrition. These findings may have been due to how the NP perceived their health status or possible the influence such as attitudes and weight (Pender, 1996). In a study by Eachus (1991), nurses’ MHLC was explored. The researcher found that nurses appear to attribute health and illness to chance factors to only a moderate degree and scored much higher on IHLC.

These studies closely reflect the results of the present study. In this study nutrition, physical activity, and health responsibility were positively associated to chance health locus of control. These results reflect those found in Snyder’s (2006) study that showed these behaviors are not necessary to maintaining optimal health. This could be due to NPs’ views that nutrition, physical activity, and health responsibility are behaviors that occur on their own.

Summary

In this study NPs scored the highest on IHLC, which means they believed they were in control of their own health. They scored the highest on the HPLP subscales of nutrition, interpersonal relations, and spiritual growth. The subscales of interpersonal relations and stress management had the highest correlation with IHLC. The subscale of nutrition was found to have a significant correlation to CHLC. The other subscales were found to have no significant correlation.
CHAPTER V

SUMMARY, CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

Introduction

The purpose of this study was to examine the relationship between health locus of control and health-related behaviors of NPs. The research question was: What is the relationship between health locus of control and health-related behaviors of NPs. Fifty-nine NPs completed both the MHLC and HPLP surveys. It was hoped that a better understanding of NPs’ own health beliefs and health-related behaviors would lead to an increased knowledge on how their health beliefs and health behaviors may potentially influence their clients. Presented in this chapter are a summary of the results of the study, conclusions, limitations of this study, and recommendations for nursing practice, education and further research.

Summary

The credibility of nurses as health educators is linked to the expectation that they model healthy behaviors, and their effectiveness as role models is judged on the basis of observable compliance with these behaviors. Nurse practitioners in a primary health care setting have a very special role in providing health-promoting education. In this role they are faced with the challenge of maintaining their own health-related behaviors, which have great influence on what they teach their clients. When nurses feel they have not met health promotion role model standards set by their clients, health teaching may be compromised. For example, a study by Valentine and Hadeka (1986) found that nursing students and graduate nurses who never or only occasionally engaged in
teaching patients health-promotion practices had low participation rates in self-breast examination, seat belt usage and daily exercise. For the majority of nurses, health promotion practices are something to strive for rather than to be fully realized. If nurses perceive that limitations in promoting personal health make them more believable role models, they can use this to great advantage in teaching patients. By offering personal stories about their own challenges with health-promoting practices and by sharing strategies in making health-promoting changes, nurses can be powerful in effecting behavior changes.

Having a better understanding of the health beliefs and health behaviors of NPs may help them as providers see the influence their own health beliefs and health behaviors have on teaching health promotion. This study investigated the relationship health locus of control has on health-related behaviors of NPs. The following questions helped guide the study:

1. What is the HLC of NPs?
2. What are the health-related behaviors of NPs?
3. What is the relationship HLC and health-related behaviors of NPs?

The HPM was used as the theoretical guiding framework for this study (Pender, 1996). The model serves as a guide to explore the processes that motivate individuals to enhance their health through participating in positive healthy outcomes (Pender et al., 2002). According to Pender (1996), cognitive factors such as importance of health and perceived control of health are influential when it comes to health behaviors. For this reason, the health promotion model was selected for this study. This model assisted in identifying NPs perceived health beliefs and health-related behaviors and how these variables influence NPs' participation in health promotion behaviors.
A systematic sampling of NPs who are members of the WAPNA were selected for this study. Criteria for sample selection included Wisconsin NPs having a master’s degree, membership in WAPA, and have greater than 1 year of experience. One hundred NPs were selected from the Wisconsin Nurses Association. The study’s response rate was 59% (n = 59). Participants were mailed three instruments including the HPLP, the MHLC, and a demographic data survey.

The MHLC questionnaire was used to identify the participants’ perceived HLC over their health. The MHLC is composed of three subscales: internality, powerful others, and chance. The MHLC has a total of 18 items, each of which is rated on a 6-point Likert scale from strongly disagree to strongly agree. Six items contribute to the internal locus of control scale, six to the powerful others scale, and six to the chance locus of control scale. The possible range of scores for each subscale is 6 to 36, with higher scores indicating a greater belief in internal, powerful others, or chance control over health.

The HPLP II was used in this study to identify the health-related behaviors of the participants. The HPLP II measures six subscales of health promotion behaviors: health responsibility, physical activity, nutrition, spiritual growth, interpersonal relations, and stress management. The higher the score for each subscale, the more often the individual participates in the behavior. The demographic data survey was utilized to identify age, gender, years of experience, and area of specialty.

Results of the study found a majority of the NPs scored the highest on the internal health locus of control subscale of the MHLC (M = 27.1, SD = 4.01). This means NPs in this study felt their own personal behavioral factors are responsible for their health or illness. It was also identified that NPs in the study were found to
participate in health lifestyle behaviors "often." Nurse practitioners in the study rated interpersonal relationships, spiritual growth, and nutrition in identifying their health-related behaviors. There was a significant relationship between iHLC and interpersonal relations ($r = 2.00, p < .025$) and stress management ($r = 2.63, p < .031$). A significant relationship was also found between CHLC and nutrition ($r = 2.00, p < .045$). The PHLC and the subscales of physical activity ($r = 2.75, p < .703$) and health responsibility ($r = 2.78, p < .248$) had little significance in this study.

Conclusions

The findings of this study address NPs' own health beliefs and health behaviors and how these variables can influence the health of their clients. The following are some conclusions:

1. Participants in this study had an average age of 49.8 years. The majority were female, specializing in women's health and family practice and had 6 to 10 years of experience.

2. Participants were found to have an IHLC.

3. Participants found the subscales of nutrition, interpersonal relations, and spiritual growth on the HPLP II to be important health behaviors in their lives. They practiced these health behaviors "often."

4. Participants viewed the HPLP subscales of health responsibility, physical activity, and stress management as less important health behaviors. They participated in these behaviors "sometimes" rather than "often" or "routinely."

5. Statistical significance was found between iHLC and the subscales of stress management and interpersonal relations.
6. Statistical significance was also found between CHLC and the subscale of nutrition.

Recommendations

Implications for Nursing Practice

With health promotion at the forefront of health care, the teaching role of nurses is more important than ever. The credibility of nurses as health educators is associated with the expectation that they model healthy behaviors. Their effectiveness as role models is judged on the basis of observable compliance with these behaviors. Nurse practitioners must have a clear understanding that as health care providers the impact they have on their clients' health is crucial. They must also reflect on their own health and what message they are sending to their clients.

Knowing their own personal health beliefs and behaviors may help NPs form a positive relationship with their clients. Mutual sharing of difficulties and shortcomings between the NPs and their clients can enable the development of a health-promoting relationship. This relationship allows both the NP and the client to both make healthier lifestyle changes. The nurse-patient relationship reflects a unique nursing approach to the health-promoting role model and captures both the human science of caring and primary health care.

In this study, NPs were found to score the highest in nutrition, interpersonal relationships, and spiritual growth. This means that nurses often engaged in these health behaviors to improve or maintain their health. Health responsibility, physical activity, and stress management were sometimes practiced by the participants. These
findings can help NPs identify their strengths and weaknesses in certain areas of health, which may affect what they teach their clients. Nurse practitioners can use these findings as a tool to identify their own health behaviors and beliefs as well as doing their own self-assessment. Once they have reviewed and assessed their own health, they can make the necessary changes to maximize the positive influence they have on their clients. They must also understand that physical activity and having a healthy responsibility are two health behaviors that had low scores in this study, indicating that NPs must make an effort to include these behaviors in their healthy lifestyles.

Implications for Nurse Educators

Nurse educators have the responsibility of teaching and participating in health promotion. They must acknowledge the influence they have on their students. Familiarizing themselves with nursing research on the topic of health promotion will increase their awareness. Having a firm understanding of health promotion and the health promotion model can assist them when educating their students.

Implications for Nursing Research

More research must be conducted on comparing health beliefs and health behaviors of nurses, and other health care providers that can influence the health behaviors of clients. In addition, qualitative research may be appropriate to explore deeper into NPs’ health behaviors and health beliefs. For example, NPs may express why they do or do not elect to participate in certain health behaviors. It is also recommended that researchers take the results from this study and elaborate on them in attempt to identify what influence NPs’ HLC and health-related behaviors have on counseling their clients. More health-oriented research on the characteristics of health
lifestyle behaviors is needed. In addition, exploring the financial impact of healthy lifestyles should be examined, furthering the impact that healthy lifestyle education can have in promoting health.

Limitations

Potential problems with this type of research can include errors in the collection of data and the analysis. Surveys were mailed to participants; there was no opportunity for participants to ask questions regarding the surveys. Collaborating with an experienced research advisor limited errors in data analysis. The small sample size limits the generalizability of the findings. The sample population may have been a limitation. All of the NPs who participated in this study were members of the WAPNA. These findings may not reflect those NPs who are not members.

Furthermore, 58 of the 59 participants were female and had an average age of 49.8 years. This particular group may have different health beliefs and behaviors. These findings may potentially skew the data.

Chapter Summary

A summary of the study's findings, along with a discussion of the study's limitations, was presented in this chapter. Recommendations for nursing practice, nursing educators, and nursing research were also included in this chapter. Through this research, NPs will hopefully become aware of the influence their health beliefs and health behaviors have on their clients.

More health-oriented research on the characteristics of health lifestyle behaviors is needed. The development and testing of an assessment tool for health-promoting
behaviors, specifically for health care providers, is also recommended. The findings from these studies and assessment tools could potentially encourage NPs to assess their own health and assume a more active role in health promotion.
APPENDIX A

Demographic Data Instrument
DEMOGRAPHIC QUESTIONNAIRE

Thank you for participating in this study being conducted by myself, Stacey Gusman, RN, BSN, Master of Nursing candidate at the University of Wisconsin Oshkosh. The three surveys you are about to answer are a critical part of the study and seek to understand the influence health locus of control has on health behaviors. Please complete all three surveys within 2 weeks of receiving them. I appreciate your time and candor. The surveys should be sent together in the addressed, stamped envelope I have provided for you.

Age: ________

Gender: □ Female □ Male

Area of specialty:

□ Acute care
□ Adult health
□ Geriatrics
□ Pediatrics
□ Psychiatry
□ Women's/obstetrical-gynecological health
□ Other ________________________________

Years of experience:

□ 1-5
□ 6-10
□ 11-20
□ 21-30
□ 31-40
□ 41-50
□ 50+
APPENDIX B

Multidimensional Health Locus of Control (Form A)
MULTIDIMENSIONAL HEALTH LOCUS OF CONTROL (FORM A)

Instructions: Each item below is a belief statement about your medical condition with which you may agree or disagree. Beside each item we would like you to circle the number that represents the extent to which you agree or disagree with that statement. The more you agree with a statement, the highest will be the number you circle. The more you disagree with a statement, the lower will be the number you circle. Please make sure that you answer EVERY ITEM and that you circle ONLY ONE number per item. This is a measure of your personal beliefs; obviously, there are no right or wrong answers.

1 = STRONGLY AGREE (SD)  4 = SLIGHTLY AGREE (A)
2 = MODERATELY DISAGREE (MD)  5 = MODERATELY AGREE (MA)
3 = SLIGHTLY DISAGREE (D)  6 = STRONGLY AGREE (SA)

<table>
<thead>
<tr>
<th></th>
<th>SD</th>
<th>MD</th>
<th>D</th>
<th>A</th>
<th>MA</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. If I get sick, it is my own behavior which determines how soon I get well again.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>2. No matter what I do, if I am going to get sick, I will get sick.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>3. Having regular contact with my physician is the best way for me to avoid illness.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>4. Most things that affect my health happen to me by accident.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>5. Whenever I don't feel well, I should consult a medically trained professional.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>6. I am in control of my health.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7. My family has a lot to do with my becoming sick or staying healthy.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>8. When I get sick, I am to blame.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>9. Luck plays a big part in determining how soon I will recover from an illness.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>10. Health professionals control my health.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>11. My good health is largely a matter of good fortune.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>12. The main thing which affects my health is what I myself do.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>13. If I take care of myself, I can avoid illness.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>14. Whenever I recover from an illness, it's usually because other people (for example, doctors, nurses, family, friends) have been taking good care of me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>15. No matter what I do, I'm likely to get sick.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>16. If I'm meant to be, I will stay healthy.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>17. If I take the right actions, I can stay healthy.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>18. Regarding my health, I can only do what my doctor tells me to do.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

SCORING INSTRUCTIONS

<table>
<thead>
<tr>
<th></th>
<th>Form(s)</th>
<th>Possible Range</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal</td>
<td>A, B, C</td>
<td>6 – 36</td>
<td>1, 6, 8, 12, 13, 17</td>
</tr>
<tr>
<td>Chance</td>
<td>A, B, C</td>
<td>6-36</td>
<td>2, 4, 9, 11, 15, 16</td>
</tr>
<tr>
<td>Powerful Others</td>
<td>A, B</td>
<td>6-36</td>
<td>3, 5, 7, 10, 14, 18</td>
</tr>
<tr>
<td>Doctors</td>
<td>C</td>
<td>3-18</td>
<td>3, 5, 14</td>
</tr>
<tr>
<td>Other People</td>
<td>C</td>
<td>3-18</td>
<td>7, 10, 18</td>
</tr>
</tbody>
</table>

The score on each subscale is the sum of the values circled for each item on the subscale (i.e., where 1 = "strongly disagree" and 6 = "strongly agree"). No items need to be reversed before summing. All of the subscales are independent of one another. **There is no such thing as a "total" MHLC score.**
APPENDIX C

Health-Promoting Lifestyle Profile II
HEALTH PROMOTING LIFESTYLE PROFILE INSTRUMENT

DIRECTIONS: This questionnaire contains statements about your present way of life or personal habits. Please respond to each item as accurately as possible, and try not to skip any item. Indicate the frequency with which you engage in each behavior by circling:

N for Never, S for sometimes, O for often, or R for routinely.

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Sometimes</th>
<th>Often</th>
<th>Routinely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Discuss my problems and concerns with people close to me.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>2. Choose a diet low in fat, saturated fat, and cholesterol</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>3. Report any unusual signs or symptoms to a physician or other health professional.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>4. Follow a planned exercise program.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>5. Get enough sleep.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>6. Feel I am growing and changing in positive ways.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>7. Praise other people easily for their achievements.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>8. Limit use of sugars and food containing sugar (sweets).</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>9. Read or watch TV programs about improving health.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>10. Exercise vigorously for 20 or more minutes at least three times a week (such as brisk walking, bicycling, aerobic dancing, using a stair climber)</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>11. Take some time for relaxation each day.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>12. Believe that my life has purpose.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>13. Maintain meaningful and fulfilling relationships with others.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>14. Eat 6-11 servings of bread, cereal, rice and pasta each day.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>15. Question health professionals in order to understand their instructions.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>16. Take part in light to moderate physical activity (such as sustained walking 30-40 minutes 5 or more times a week).</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>17. Accept those things in my life which I can not change.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>18. Look forward to the future.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>19. Spend time with close friends.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>20. Eat 2-4 servings of fruit each day.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>22. Take part in leisure-time (recreational) physical activities (such as swimming, dancing, bicycling).</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>23. Concentrate on pleasant thoughts at bedtime.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>24. Feel content and at peace with myself.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>25. Find it easy to show concern, love and warmth to others.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>26. Eat 3-5 servings of vegetables each day.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>27. Discuss my health concerns with health professionals.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>28. Do stretching exercises at least 3 times per week.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>29. Use specific methods to control my stress.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>31. Touch and am touched by people I care about.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>32. Eat 2-3 servings of milk, yogurt or cheese each day.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>33. Inspect my body at least monthly for physical changes/danger signs.</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td>34. Get exercise during usual daily activities (such as walking during lunch, using stairs instead of elevators, parking car away from the destination)</td>
<td>N</td>
<td>S</td>
<td>O</td>
<td>R</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Never</td>
<td>Sometimes</td>
<td>Often</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>-------</td>
<td>-----------</td>
<td>-------</td>
</tr>
<tr>
<td>35.</td>
<td>Balance time between work and play.</td>
<td>N</td>
<td>S</td>
<td>O</td>
</tr>
<tr>
<td>36.</td>
<td>Find each day interesting and challenging.</td>
<td>N</td>
<td>S</td>
<td>O</td>
</tr>
<tr>
<td>37.</td>
<td>Find ways to meet my needs for intimacy.</td>
<td>N</td>
<td>S</td>
<td>O</td>
</tr>
<tr>
<td>38.</td>
<td>Eat only 2-3 servings from the meat, poultry, fish, dried beans, eggs, and nuts group each day.</td>
<td>N</td>
<td>S</td>
<td>O</td>
</tr>
<tr>
<td>39.</td>
<td>Ask for information from health professionals about how to take good care of myself.</td>
<td>N</td>
<td>S</td>
<td>O</td>
</tr>
<tr>
<td>40.</td>
<td>Check my pulse rate when exercising.</td>
<td>N</td>
<td>S</td>
<td>O</td>
</tr>
<tr>
<td>41.</td>
<td>Practice relaxation or meditation for 15-20 minutes daily.</td>
<td>N</td>
<td>S</td>
<td>O</td>
</tr>
<tr>
<td>42.</td>
<td>Am aware of what is important to me in life.</td>
<td>N</td>
<td>S</td>
<td>O</td>
</tr>
<tr>
<td>43.</td>
<td>Get support from a network of caring people.</td>
<td>N</td>
<td>S</td>
<td>O</td>
</tr>
<tr>
<td>44.</td>
<td>Read labels to identify nutrients, fats, and sodium content in packaged food.</td>
<td>N</td>
<td>S</td>
<td>O</td>
</tr>
<tr>
<td>45.</td>
<td>Attend educational programs on personal health care.</td>
<td>N</td>
<td>S</td>
<td>O</td>
</tr>
<tr>
<td>46.</td>
<td>Reach my target heart rate when exercising.</td>
<td>N</td>
<td>S</td>
<td>O</td>
</tr>
<tr>
<td>47.</td>
<td>Pace myself to prevent tiredness.</td>
<td>N</td>
<td>S</td>
<td>O</td>
</tr>
<tr>
<td>48.</td>
<td>Feel connected with some force greater than myself.</td>
<td>N</td>
<td>S</td>
<td>O</td>
</tr>
<tr>
<td>49.</td>
<td>Settle conflicts with others through discussion and compromise.</td>
<td>N</td>
<td>S</td>
<td>O</td>
</tr>
<tr>
<td>50.</td>
<td>Eat breakfast.</td>
<td>N</td>
<td>S</td>
<td>O</td>
</tr>
<tr>
<td>51.</td>
<td>Seek guidance or counseling when necessary.</td>
<td>N</td>
<td>S</td>
<td>O</td>
</tr>
<tr>
<td>52.</td>
<td>Expose myself to new experiences and challenges.</td>
<td>N</td>
<td>S</td>
<td>O</td>
</tr>
</tbody>
</table>

**Scoring Instructions**

Items are scored as:

- Never (N) = 1
- Sometimes (S) = 2
- Often (O) = 3
- Routinely ® = 4

A score for overall health-promoting lifestyle is obtained by calculating a mean of the individual's responses to all 52 items; six subscale scores are obtained similarly by calculating a mean of the responses to subscale items. The use of means rather than sums of scale items is recommended to retain the 1 to 4 metric of item responses and to allow meaningful comparisons of scores across subscales. The items included on each scale are as follows:

- **Health-Promoting Lifestyle**: 1 to 51
  - Health Responsibility: 3, 9, 15, 21, 27, 33, 39, 45, 51
  - Physical Activity: 4, 10, 16, 22, 28, 34, 40, 46
  - Nutrition: 2, 8, 14, 20, 26, 32, 38, 44, 50
  - Spiritual Growth: 6, 12, 18, 24, 30, 36, 42, 48, 52
  - Interpersonal Relations: 1, 7, 13, 19, 25, 31, 37, 43, 49
  - Stress Management: 5, 11, 17, 23, 29, 35, 41, 47
APPENDIX D

UW Oshkosh IRB Approval Letter
Ms. Stacey Gusman  
1604 Westview Dr.  
Marathon WI 54448

Dear Ms. Gusman:

On behalf of the UW Oshkosh Institutional Review Board for Protection of Human Participants (IRB), I am pleased to inform you that your application has been approved for the following research: Knowledge of Coronary Heart Disease Risk Factors in Women With Diabetes.

Your research has been categorized as NON-EXEMPT, which means it is subject to compliance with federal regulations and University policy regarding the use of human participants as described in the IRB application material. Your protocol is approved for a period of 12 months from the date of this letter. A new application must be submitted to continue this research beyond the period of approval. In addition, you must retain all records relating to this research for at least three years after the project's completion.

Please note that it is the principal investigator's responsibility to promptly report to the IRB Committee any changes in the research project, whether these changes occur prior to undertaking, or during the research. In addition, if harm or discomfort to anyone becomes apparent during the research, the principal investigator must contact the IRB Committee Chairperson. Harm or discomfort includes, but is not limited to, adverse reactions to psychology experiments, biologics, radiotopes, labeled drugs, or to medical or other devices used. Please contact me if you have any questions (PH# 920/424-7172 or e-mail: rauscher@uwosh.edu).

Sincerely,

[Signature]

Dr. Frances Rauscher  
IRB Chair

cc: Paulette Zachman  
1262

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APPENDIX E

Informational Letter and Informed Consent
INFLUENCE OF HEALTH BELIEFS ON HEALTH-RELATED BEHAVIORS OF NURSE PRACTITIONERS

I, Stacey Gusman, RN, BSN, Master of Nursing candidate at the University of Wisconsin Oshkosh am conducting a study examining the influence of health beliefs on health-related behaviors of nurse practitioners. I would appreciate your participation in this study as it will assist us in understanding how our own health beliefs influence our health-related behaviors as health care providers.

Although I could study this question by just interviewing you, I feel that the questionnaires serve as the best way to obtain the desired information and are noninvasive. The information gathered form the questionnaires will be recorded anonymously. No information about you will be released to anyone in a way that could identify you.

As part of this study, you will be asked to complete three different questionnaires. The first questionnaire covers demographic information and should take roughly 5-10 minutes to complete. The second questionnaire is the Multidimensional Health Locus of Control Instrument. It includes 18 questions regarding your health beliefs and should take no longer than 20 minutes. The third and final questionnaire is Pender’s Health Promotion Lifestyle Profile, which includes 52 questions. It should take roughly 30 minutes to complete.

I do not anticipate that the study will present any medical or social risk to you, other than the inconvenience of extra time required for you to answer the questionnaires. Participation in this study may not benefit you directly.

If you choose to participate in this study, please return the completed questionnaires within 2 weeks of receiving them. I will assume completed questionnaires returned are your consent to participate in the study. A reminder letter will be sent 1 week after questionnaires have been sent.

If you would like to decline participation, please disregard this letter and the questionnaires sent to you.

Once the study is completed, I would be glad to share the results with you. In the meantime, if you have any questions, please feel free to contact:

Stacey Gusman, RN, BSN
1604 Westview Drive
Marathon, WI 54448
(715) 297-0318
If you have any complaints or questions about your treatment or rights as a participant in this study, please call or write:

Chair, Institutional Review Board
for Protection of Human Participants
C/o Grants Office
University of Wisconsin Oshkosh
800 Algoma Blvd.
Oshkosh, WI 54901

Although the chairperson may ask for your name, all complaints are kept in confidence.
REFERENCES


