



Western Michigan University  
ScholarWorks at WMU

---

Dissertations

Graduate College

---

6-2000

## A Comparison of Beginning and Advanced Counselor Education Students on the Health Locus of Control Scale

Christina Minger  
*Western Michigan University*

Follow this and additional works at: <https://scholarworks.wmich.edu/dissertations>



Part of the Counselor Education Commons

---

### Recommended Citation

Minger, Christina, "A Comparison of Beginning and Advanced Counselor Education Students on the Health Locus of Control Scale" (2000). *Dissertations*. 1471.  
<https://scholarworks.wmich.edu/dissertations/1471>

This Dissertation-Open Access is brought to you for free and open access by the Graduate College at ScholarWorks at WMU. It has been accepted for inclusion in Dissertations by an authorized administrator of ScholarWorks at WMU. For more information, please contact [wmu-scholarworks@wmich.edu](mailto:wmu-scholarworks@wmich.edu).



**A COMPARISON OF BEGINNING AND ADVANCED  
COUNSELOR EDUCATION STUDENTS ON THE  
HEALTH LOCUS OF CONTROL SCALE**

by

**Christina Minger**

**A Dissertation  
Submitted to the  
Faculty of The Graduate College  
in partial fulfillment of the  
requirements for the  
Degree of Doctor of Education  
Department of Counselor Education  
and Counseling Psychology**

**Western Michigan University  
Kalamazoo, Michigan  
June 2000**

# **A COMPARISON OF BEGINNING AND ADVANCED COUNSELOR EDUCATION STUDENTS ON THE HEALTH LOCUS OF CONTROL SCALE**

**Christina Minger, Ed.D.**

**Western Michigan University, 2000**

**Traditional counselor training incorporates a combination of didactic and experiential learning. Through this process of learning, counseling students have the opportunity to develop principles of self-learning and self-awareness leading them to counseling self-efficacy. Through this self-development, students may make choices pertaining to their health. By examining the health locus of control in beginning counselors, not only were the student counselors' historical view of health-related issues examined, but their current perceptions of external and internal coping devices were also investigated. The Health Locus of Control Scale (HLCS) was developed to provide more sensitive predictions of the relationship between internality and health behaviors (Wallston & Wallston, 1978).**

**A sample of 30 beginning counseling students and 28 advanced counseling students was purposely selected in order to ascertain if there was a significant difference between the two training groups with regards to their health locus of control. Four symptom classifications—anxiety, depression, interpersonal sensitivity, and somatization—were selected from the Symptom Checklist-90-R (SCL-90-R®; Derogatis, 1994) to determine if there were correlations between symptom classifications and the two training groups' total health locus of control score.**

***t* tests between the four symptom classification scores indicated a significant mean difference in anxiety and depression with beginning students exhibiting**

significantly higher anxiety and depression scores. There were no significant correlations between the HLCS and the four symptom classifications, and there were no significant relationships found between a linear combination of the four symptom classification variables and the total health locus of control scores. Results of the *t* test between the means of the training groups and total HLCS also indicated no statistical significance.

Results of this study suggest that the counselor training process does not have a significant influence on health locus of control beliefs. Recommendations for further research are contained in the document.

## **INFORMATION TO USERS**

**This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.**

**The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.**

**In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.**

**Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps.**

**Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.**

**Bell & Howell Information and Learning  
300 North Zeeb Road, Ann Arbor, MI 48106-1346 USA  
800-521-0600**

**UMI<sup>®</sup>**



UMI Number: 9973054

UMI<sup>®</sup>

---

UMI Microform 9973054

Copyright 2000 by Bell & Howell Information and Learning Company.

All rights reserved. This microform edition is protected against  
unauthorized copying under Title 17, United States Code.

---

Bell & Howell Information and Learning Company  
300 North Zeeb Road  
P.O. Box 1346  
Ann Arbor, MI 48106-1346

**Copyright by  
Christina Minger  
2000**



## **ACKNOWLEDGMENTS**

**I would like to begin by acknowledging my doctoral chairperson, Dr. Robert Betz, for his support, patience, and guidance. He exemplifies the true meaning of the role of mentor.**

**I want to thank Dr. Al Hovestadt and Dr. Rich Oxhandler for being on my committee, and Dr. Joe Oldz and the Center for Counseling and Psychological Services for allowing me to collect my data.**

**Obviously, without the genuine love and support of my family, this project never would have evolved: my love and gratitude to my husband, Chris Jay, our daughter, Erin Michelle, and our son, Shaun Christopher. Due to the many hours this project demanded, my two moms provided help in many ways: my love and thanks to Josephine Long and Beverly Minger.**

**Several individuals provided the necessary assistance when I did not have the knowledge: many thanks to Nicole LaCombe for her computer skills, and to my dear friends, Dr. Jody Newman and Dr. Dale Fuqua, for their ability to make statistical analysis very understandable.**

**Lastly, I want to thank my trusted friend and colleague, Dr. Jan Werbinski, for her encouragement to finish this project and her never-ending belief in my integrated therapeutic principles.**

**Christina Minger**

## TABLE OF CONTENTS

<b>ACKNOWLEDGMENTS</b> .....	<b>ii</b>
<b>LIST OF TABLES</b> .....	<b>v</b>
<b>CHAPTER</b>	
<b>I. INTRODUCTION</b> .....	<b>1</b>
<b>Background</b> .....	<b>1</b>
<b>Statement of the Problem</b> .....	<b>3</b>
<b>Research Objective</b> .....	<b>5</b>
<b>Significance of the Study</b> .....	<b>5</b>
<b>Review of the Literature</b> .....	<b>6</b>
<b>Self-awareness in Counselor Education</b> .....	<b>14</b>
<b>Definition of Terms</b> .....	<b>21</b>
<b>II. METHOD</b> .....	<b>22</b>
<b>Population and Sample</b> .....	<b>22</b>
<b>Population</b> .....	<b>22</b>
<b>Sample</b> .....	<b>23</b>
<b>Instruments</b> .....	<b>24</b>
<b>Statistical Hypotheses</b> .....	<b>26</b>
<b>III. RESULTS</b> .....	<b>28</b>
<b>Introduction</b> .....	<b>28</b>
<b>Description of the Samples</b> .....	<b>28</b>
<b>Analysis of Data</b> .....	<b>32</b>

## Table of Contents—Continued

### CHAPTER

<b>IV. CONCLUSIONS AND RECOMMENDATIONS . . . . .</b>	<b>37</b>
<b>Summary . . . . .</b>	<b>37</b>
<b>Discussion and Conclusions . . . . .</b>	<b>39</b>
<b>Limitations . . . . .</b>	<b>42</b>
<b>Recommendations . . . . .</b>	<b>42</b>
<b>APPENDICES</b>	
<b>A. Human Subjects Institutional Review Board         Letter of Approval . . . . .</b>	<b>44</b>
<b>B. Authorization for Research . . . . .</b>	<b>46</b>
<b>C. Participant Consent Form . . . . .</b>	<b>48</b>
<b>D. Demographic Form . . . . .</b>	<b>50</b>
<b>E. Health Locus of Control Scale . . . . .</b>	<b>52</b>
<b>F. Permission Letter for Reproduction of Items         From the Symptom Checklist-90-R . . . . .</b>	<b>55</b>
<b>G. Sample Items From the Symptom Checklist-90-R . . . . .</b>	<b>57</b>
<b>BIBLIOGRAPHY . . . . .</b>	<b>59</b>

## LIST OF TABLES

1. Mean Credit Hours, Standard Deviations, and Mean Ages of the Participants .....	29
2. Gender and Ethnic Origin Raw Data of the Participants .....	30
3. Acute Medical Condition Responses and Percentages for the Participants .....	31
4. Chronic Medical Condition Responses and Percentages for the Participants .....	31
5. Symptom Classification Means, Standard Deviation, and <i>t</i> Score .....	33
6. Mean, Standard Deviation, and <i>t</i> Scores of HLCS .....	34
7. Pearson Correlation of Total HLCS to Symptom Classification .....	35
8. Summary of Multiple Regression Analysis With the Total HLCS and SCL-90-R Symptom Classifications .....	36

## **CHAPTER I**

### **INTRODUCTION**

#### **Background**

**Locus of control refers to the perceptions held by individuals regarding the sources of control of events and outcomes in their lives. Individuals with an internal locus of control believe their life outcomes are based on personal efforts, whereas individuals with an external locus of control believe that outcomes are based on forces or chance happenings that occur outside their personal control (Rotter, 1966). After developing the locus of control scale, Rotter recognized the emergent area between internal control and physical health or well-being. While researchers have demonstrated the “positive” relationships of internal locus of control and physical health, “negative” relationships have not been reported in the literature (Wallston, Wallston, Kaplan, & Maides, 1976). Wallston et al. believed this was attributed to researchers not reporting the results of hypotheses that were not confirmed. The construct of the locus of control theory was originally predicated on the Social Learning Theory and, according to Social Learning Theory, it is assumed that as individuals continue to experience consistency in a given situation, it will lead individuals to develop specific expectancies (Wallston et al., 1976). These expectancies appeared to play a role in determining the future behavior of individuals in that given situation. Wallston and Wallston (1978) believed there would be difficulty predicting the health behaviors of individuals using generalized instruments**

such as Rotter's Internal-External Locus of Control Scale (I-E scale), so they developed the Health Locus of Control Scale (HLCS). They believed that a health-related locus of control instrument would provide more sensitive predictions of the relationship between internality and health behaviors (Wallston et al., 1976).

Lau (1982) also reported that not all empirical attempts to associate locus of control to health have been successful, and often these failures are never published. Lau further believed that many of these failures could be partially due to the use of general locus of control measures or single-item health-specific measures of unknown reliability and validity. However, it is still believed that health locus of control is significantly related to a variety of health behaviors and health outcomes. Lau also believed it is necessary to understand the origins of health locus of control beliefs and if it is understood how these beliefs develop, then medical professionals and families can become aware of situations that can lead to increased internal or external beliefs.

Few researchers to date have addressed the origins of health locus of control. It can be extrapolated from previous locus of control research that these beliefs develop from specific experiences and past reinforcement. For example, persons who have been successful in control attempts in certain situations will, therefore, be more internal focused, whereas persons who have experienced unsuccessful attempts at control will be more external focused (Rotter, 1966). It would seem that as persons experience consistency, nurturing, or positive reinforcement, they would, therefore, develop more generalized internal control.

The following section discusses studies pertaining to health specific locus of control beliefs. Tolar (1978) was one of the first researchers to explore this area and found that women who had many childhood experiences with illness and traumas

were more external in their beliefs about how to control their health. This finding, however, did not show up in males.

A group of epileptics was studied by DeVellis, DeVellis, Wallston, and Wallston (1980), and it was found that greater predictability and controllability of seizures were correlated with greater internal health locus of control beliefs when compared to epileptics that had earlier onset and increased years of seizures which were associated with increased external beliefs. It appears that early or accumulated experiences with medical problems should then be expected to contribute to health locus of control beliefs and that long-term medical problems would also have powerful effects on the health locus of control beliefs. Educational methods that promote good health habits taught by either parents or schools could be beneficial in affecting one's self-control and belief system (DeVellis et al., 1980).

The Health Locus of Control instrument (Wallston et al., 1976) was developed in order to measure individuals' belief that their health is or is not determined by their behavior. The internal and external control construct follows the same design as Rotter's locus of control theory. Individuals with internal health locus of control believe that their health is largely determined by their own behavior, while external locus of control individuals believe that their health is determined more by chance, fate, or powerful others (Wallston & Wallston, 1978). The HLCS has been used in various empirical studies examining the relationship between health locus of control and health-related behaviors (Marks, 1998).

### **Statement of the Problem**

**Traditional counselor training incorporates a combination of didactic and experiential learning experiences wherein counselors in training learn and apply**

various theories of counseling. As students become educated in the various theories, they make intentional choices of a theory, or theories, that parallel their belief system (Ivey, Ivey, & Simek-Downing, 1987). Furthermore, during counselor training, students become exposed to self-examination and self-awareness techniques. Traditional counselor training has taken a similar path in training counselors as allopathic medicine has taken in training physicians. America's physical and mental health systems are predicated on symptom analysis and treatment specific to the patient's complaints.

By examining the health locus of control in beginning counselors, not only are the student counselors' historical views of health-related issues examined, but their perceptions of external and internal coping devices are also investigated. Examining counseling students' health locus of control may help determine if current educational methods are assisting students in self-examination techniques and indirectly affecting perceptions about health-related beliefs.

Astin, Shapiro, Lee, and Shapiro (1999) concluded that a substantial number of patients are becoming more attracted to complementary–alternative medicine (CAM) techniques because they find many of these therapies nonconflicting with their philosophical orientations toward health. They believe that CAM-related techniques have actually been developed from research demonstrating the importance of psychological factors in treating and preventing illness; thus, the most important factor appears to be control and the impact self-control has on health behaviors. By comparing the beginning and advanced counselor students' health locus of control, evidence can be presented to suggest if beginning and advanced counseling students have the skill and knowledge to understand their own health locus of control. Furthermore, if a significant difference is found comparing the health locus of control



beliefs between beginning and advanced students, educators could become more aware of the significance of educational methods upon health locus of control in counselor education.

### **Research Objective**

The research objective was to compare Health Locus of Control Scale scores of beginning and advanced counselor education students. Beginning counselor education students were defined as students who have begun required core course work before actual counseling practicum experience. Advanced students are defined as students who had completed 35 or more hours of counselor education credits and were presently enrolled in a practicum class. A comparison was made between the beginning and advanced students to ascertain whether there was a significant difference between the health locus of control of beginning counselor education and advanced counselor education students. The research objective was to ascertain whether beginning or advanced students have internal or external health locus of control beliefs and if these beliefs change as a result of counselor training methods.

### **Significance of the Study**

Historically, counselor education programs have placed the emphasis in counselor training on educational methods that train candidates in an appreciation and understanding of counseling processes (Marks, 1998; Egan, 1990; Ivey et al., 1987). Generic training can, thereby, be applied to many different counseling problems. More and more research and scholarly material is published showing how complex and diverse the present day counseling profession is becoming (Astin et al., 1999; Marks, 1998). This situation parallels what the medical profession has faced

and is facing today. With so much complexity in the medical field, many medical students are specializing in subclinical fields because current medical knowledge and technology demands that degree of specialization in order to ethically and realistically treat the complex medical problems of today. The counseling profession, and in particular counselor education, has also become sensitive to the possibility of providing counselors with exposure and experience in various fields (Marks, 1998), specifically the health care field, where complex, serious, and chronic illnesses have increased and demand coping and adaptation skills in order to assist people with their diverse needs. In their search for solutions, persons seek out other professions in addition to medicine, and these persons often turn to the mental health field (Astin et al., 1999; Marks, 1998). Patients are referred or voluntarily seek services from the counseling profession in order to help them cope and adapt to their medical conditions. Unless counselors are trained to assess where their clients with health concerns place their health values and belief systems, increased misunderstandings and poor problem definitions can result. It is suggested that if counselors can understand their own health-related behaviors and formulate their own understanding of their own health locus of control, it is possible that counselors would become more effective in problem definition with the health-related problems facing their clients.

### **Review of the Literature**

At this writing, only one empirical study could be found that specifically addressed the health locus of control construct in counselor education. However, health locus of control researchers have examined various related behaviors such as the construct of control in mind-body medicine, and in specific medical conditions.

Astin et al. (1999) reviewed many articles seeking to understand why patients seek alternative medicine instead of traditional medicine. Their research suggests that a principal component to their choice is they find these therapies more congruent with their philosophical orientations toward health. It appears the prime component of the patient's philosophical orientation is the need for self-control. The researchers do not specifically focus on locus of control; however, they highlight several areas demonstrating their summary of the research material. First, they report illness frequently results in feelings of loss of self-control, though any method can help patients to regain their feeling of control and help cope with illness. Second, they report that self-control may be influential on physical function, and the amount of active control patients can utilize over physical functioning is important. Lastly, they recommend that therapists recognize how important it is to correlate self-control teaching strategies to a patient's presenting control styles and preferences.

The researchers suggested several areas for further research:

1. They believe more teaching strategies for changing or altering health behaviors are needed.
2. They believe that during therapy sessions therapists need to teach more self-control strategies such as mindfulness meditation, cognitive reappraisal, etc., that can be used as a defense against stressful circumstances in a client's life.
3. They believe patients need to have better access to treatment options so the patients can make more informed choices which would enhance feelings of self-efficacy with respect to health and well-being.
4. They also believe there should be more effort to educate the public about the possible health benefits of having a sense of self-control, even though there may be positive and negative components to this knowledge.

5. It is important for therapists to be sensitive to the ways physical illness and disability can contribute to a patient's loss of control, which should also include how the patient is instructed on coping strategies for regaining a sense of control even though there may be powerful health-related stressors.

6. Their research review suggests there is a cultural shift, where the physician is not the ultimate source of authority.

They believe a model needs to exist of equal partnership where the physician/therapist share in the control and decision-making tasks with the patient.

As patients have more input to their therapeutic regimen, patients gain self-control over their health circumstances and research shows these results to be a positive experience.

Wiegmann and Berven (1998) studied participants in a work-hardening, return to work program to ascertain whether internal or external health locus of control beliefs were relevant to return to work status. Seventy adults with various injuries obtained on the job were included in this study. The participants were given the Multidimensional Health Locus of Control Scale (MHLCS) on intake, then were placed in a work-hardening program that included vocational evaluation, general fitness, education of self, and personal and vocational counseling. After the program, the participants were again asked to complete the MHLCS. The participants who reported high beliefs in internal control showed greater improvement from intake to discharge on physical functioning. Wiegmann and Berven suggested that this study supported that health locus of control may be a useful psychological construct in understanding success or failure of injured workers participating in a return-to-work program.

Bennett, Moore, Norman, Murphy, and Tudor-Smith (1997) sampled 11,401 persons who completed the MHLCS and a questionnaire measuring the value for health and smoking frequency. The results of the study indicated that smokers held stronger internal, chance, and powerful others belief than nonsmokers. Ex-smokers had lower scores on internal dimensions but placed a higher value on their health than smokers. It appears that smokers more than nonsmokers have a strong belief in others for influencing their health. The authors proposed whether the results meant that the external beliefs came from the proposed ability of the medical system to cure any illness which is yet to be researched. However, this research article provided limited support for the health locus of control theory in that persons with a more internal basis of control will, therefore, choose healthy options in life.

Norman (1995) provided an extensive review of health locus of control research. He reported how psychologists have long been interested in the correlation between individuals' health behavior and their beliefs they hold about their health. Norman further reported that most of the health locus of control research has focused on the importance of internal health locus of control beliefs. Based on the understanding of the health locus of control construct, internal based persons should be more invested in health promoting behaviors. However, the results obtained were mixed. Waller and Bates (1992), Weiss and Larsen (1990), Duffy (1988), and Rauckhorst (1987) found a significant correlation between internal health locus of control beliefs and lists of health behaviors (Norman, 1995). However, other researchers have failed to find a significant correlation (Dean, 1991; Muhlenkamp, Brown, & Sands, 1985; Winefield, 1982; Wurtele, Britcher & Saslawsky, 1985). Norman (1995) also reported the inconsistency was found when specific health behaviors are explored. Carlson and Petti (1989) and Slenker, Price, and O'Connell

(1985) found a significant relationship between internal health locus of control beliefs and health behavior; again, other researchers did not find this relationship (Calnan, 1989; Norman, 1990). Norman (1995) further discussed that research on the health locus of control construct has been incomplete because researchers fail to show the value people place on their health. Norman also makes reference to Rotter's Social Learning Theory (Rotter, 1954) stating that behavior is a function of both expectancy beliefs and the value attached to certain outcomes, which substantiates the idea that health locus of control beliefs should predict health behavior only when health is valued.

In Norman's (1995) investigation on health locus of control and health behavior, he states that health value should operate as a moderator between the correlation of health locus of control and health behavior. He substantiates this claim with Weiss and Larsen's (1990) research that found a significant correlation between internal locus of control beliefs and a set of health promoting behaviors among individuals who assigned a high value to their health. No significant correlation existed with individuals who assigned a low value to their health.

Chen (1995) studied 21 college students to see if the effects of electromyographic (EMG) biofeedback enhanced their health locus of control beliefs. The participants had eight sessions of biofeedback training in a 4-week period. The participants showed significant reductions of muscle tension than control subjects at posttest and also at a 1-month follow-up. The participants who received biofeedback training showed increased internal health locus of control, but the change was not statistically significant until the follow-up session. The mean internal locus of control scores also improved significantly for the follow-up subjects, but no significant correlation between changes in EMG and health locus of control was found.

Brandon and Loftin (1991) studied the effects of 17 cyclists to see if fitness had any correlation with locus of control, depression, and state and trait anxiety. The fitness levels were assessed by the subject's maximal oxygen consumption. The subjects were given the Beck Depression Scale, the MHLCS, and the State-Trait Anxiety Inventory. The results suggest a significant relationship between physical fitness scores and lower depression. The results of the internal and self-control scores suggested that persons who cycle regularly show significantly increasing self-control characteristics resulting in an internal health locus of control. Interestingly, there was a lack of association between fitness and either state or trait anxiety. In this study, fitness did not have a positive effect on either form of anxiety. The authors did list limitations on this study, such as using too small a homogeneous population. They also did not use a true experimental design since there was no control group.

Thomas and Thompson (1994) reported that a person's beliefs about the origins of their health have been shown to influence an array of important behaviors. These origins are referred to as health locus of control. This research design examined college students' internal health locus of control and their willingness to seek and follow medical advice. The study was designed to examine the health locus of control beliefs of 609 college students. The author reported high reliability with regard to the Health Locus of Control instrument; however, they suggested that more construct development regarding health locus of control should be attempted in order to expand the construct beyond the dichotomy of internal and external locus of control.

Bandek, Marks, and Richardson (1993) studied the health locus of control beliefs of elderly Hispanic women and the relation between frequency of breast self-examination, attention to health-related information, frequency of their yearly pap

smear, and physician-performed breast exam. All women 55 years of age living in select housing projects in Los Angeles were mailed information concerning this study and 603 women agreed to participate. This study, in particular, examined the extent to which health locus of control beliefs were associated with medical screening practices. As the authors hypothesized, the subjects held the belief that health outcomes are internally controlled and were significantly related to health screening behaviors over which subjects had the choice to participate. The authors concluded that there was a significant correlation between internal health control beliefs and the use of preventative behaviors for one's well-being with Hispanic women.

Redeker (1988) surveyed the relationship between health beliefs, health locus of control, and the frequency to practice breast self-examination. The sample was limited to English-speaking women 18 years and older, and the total number of participants was 137. Health beliefs alone, and health beliefs combined with internal health locus of control, were found to predict the frequency of practice of breast self-examination. The more internal the locus of control, the more the participants performed the examination. Obviously, since only the frequency of breast examination was researched, no generalization can be made as to the effectiveness of the participants' examination techniques or the reduction of breast cancer due to the examination methods.

The role of health locus of control beliefs and expectations on the efficacy of cancer treatment was examined by Marks, Richardson, Graham, and Levine (1986). Cancer patients' perceptions of the severity of their illness and depression was significantly less for those who believed they could personally control their health and who maintained a positive outlook concerning their treatment options. Even when the disease state was considered to be terminal or very severe, patients with an internal



health locus of control maintained they believed in a more positive prognosis for survival. The variable that had the most important impact was depression. When the researchers compared the self-control expectancies and physician control expectancies, the variables were not significantly correlated. Patients have more positive expectations when they have self-control over their treatment options, when compared to physicians' attempts to control the treatment options. It is important to note that patients apparently require a partnership with their physicians; however, patients who maintained an internal health locus of control needed to fortify this construct and not have it challenged by medical personnel who tend to move the construct to a more external locus of control.

Toner and Manuck (1979) examined the relationship between health locus of control and health-related information-seeking in a sample of individuals participating in a clinic screening for hypertension. Participants with a greater internal health locus of control were more likely to ask questions and obtain written material concerning heart disease; however, there was no significant difference in selection of pamphlets concerning hypertension with regards to internal or external health beliefs.

Pinkard and Gross (1984) studied 39 rehabilitation counseling graduate students to see if the students' locus of control orientation changed during their training program. Two groups of graduate students were formulated. The first group consisted of 20 students enrolled in an introductory counseling course, and the second group consisted of 19 Master of Arts majors in the Department of Gerontology. This second group served as the control group. The first group received experiential training in counseling, and the control group received only didactic training. The results suggested that the type of class (experiential vs. traditional) and the initial external locus of control score influenced the amount of

movement from an external to an internal locus of control. Students having the highest externality before training showed a significantly greater shift toward internality after the training methods were applied. The movement was most pronounced for students who received appropriate experiential training that included principles associated with an internal locus of control orientation.

From the preceding review of available literature, there are several conclusions that can be drawn concerning the use of as well as the purpose of the health locus of control construct as a predictor of personal health behavior. First, the studies unanimously concluded that health locus of control predicted that participants with an increased internal health locus of control correlated positively with the belief they had personal control over their health circumstances. Second, the studies also suggested how individuals, through biofeedback or internal awareness, can gain control over certain organ systems, such as the immune and muscular systems. Third, they suggested that more research is needed to explore the extent of an individual's personal control over personal health decisions.

### **Self-awareness in Counselor Education**

In the preceding literature, it is clear when discussing locus of control, some form of self-awareness or self-efficacy is also present. It is important to review the self-awareness literature in counselor education because self-awareness is essentially a component of locus of control.

Ivey et al. (1987) propose there is no right way to become an effective counselor, so counselors in training must determine their own personal style of counseling. The basis for counseling style comes from the trainees' personal life experiences and their experiences and perceptions during the counselor education

process. However, exploring one's vast experience repertoire is not enough to provide the counselor with the skills to counsel. In counselor education, it is important to develop and focus on some type of conceptual framework, as Ivey et al. term "worldview." Ivey et al. explain that this worldview is part of a developmental phase of counselor education, a time when counselor trainees begin the self-awareness process of becoming a counselor. Counselor trainees move through many phases of learning and conceptualization in order to learn about themselves and develop the framework to assist others.

Bandura (1986) defines self-efficacy as "people's judgments in their capabilities to organize and execute courses of action required to attain designated types of performance" (p. 391). There has been a substantial amount of counselor education material on the construct of self-efficacy (Larson, 1998) and importantly these self-efficacy beliefs have been shown to predict the type of behavioral activity, the amount of focus to this activity, and persistence in performing this activity despite obstacles and actual performance (Bandura, 1977a). During this process, health behaviors are explored and counselor trainees are becoming aware of their own health issues. Egan (1990) believes that the need for counselor trainees to understand the holistic realm of each client is very important to counselor effectiveness. He further states that self-awareness of the counselor in this holistic realm is a basis for understanding their client's presenting problem. His recommendations are for counselor trainees to become knowledgeable of health and illness and recognize the coexistence of the psychological and physical aspects of health and disease.

The health locus of control construct has been correlated to generalized expectancy beliefs with regard to health, but not with behavior specific efficacy beliefs correlated to specific behaviors (Norman, 1995; Wallston, 1992). For

example, Norman (1995) explains that a male smoker may value his health, have strong internal health locus of control beliefs, and will not quit because he believes quitting will not improve his health. Research by Norman (1991) and Kristiansen (1987) supports this idea that key expectancy beliefs are likely to be behavior specific efficacy beliefs. Again, this research points back to the Social Learning Theory (Rotter, 1954) concept that generalized expectancy beliefs should be predictive of behavior only in situations where the experience is new and the person has little prior knowledge (Norman, 1995). In other words, individuals have to fall back on generalized beliefs. Norman (1995) states that most health-promoting decisions are usually not novel experiences, so it would be easier to make predictions of health behavior by looking at behavior specific efficacy beliefs, rather than generalized beliefs. If the health locus of control construct focuses on generalized expectancy beliefs regarding health, it could be hypothesized that internal health locus of control beliefs should have strong correlations with performance of generalized health promoting behavior (Wallston, 1992). Though not formally researched, it could be suggested that behavior-specific efficacy beliefs are associated with the construct of self-efficacy. Moreover, self-efficacy beliefs have been found to be a strong predictor of health behavior (Wallston, 1989).

Norman's (1995) research concluded, as did Wallston's (1992), that the health locus of control construct, even in correlation with health value, explains little of the variance in health behavior. Norman summarized that the health locus of control construct could be replaced with behavior-specific efficacy beliefs. In other words, to execute a health behavior, three variables are important: individuals would have to (1) place value on their health, (2) believe the behavior would promote their health, and (3) believe they have the ability to perform the behavior.

Self-efficacy in counselor education has been a widely researched topic. The understanding of self-efficacy with regards to counselor development is the next area reviewed. As discussed earlier, self-efficacy can be influenced by a wide array of experiences as presented by educational processes. Larson and Daniels (1998) provide an extensive review of 32 counseling self-efficacy articles. First, they suggest the use of Bandura's definition of self-efficacy as a definition of counselor efficacy. The definition is stated as "a generative capability in which component cognitive, social and behavioral skills must be organized into integrated courses of action to serve innumerable purposes" (Bandura, 1982, p. 122). The authors further utilize Bandura's concepts by writing:

Self-efficacy is a generative mechanism through which people integrate and apply their existing cognitive, behavioral, and social skills to a task. Self-efficacy partly determines people's actions, their decisions to engage in a task, to put forth effort, and to persevere under failure. Self-efficacy also affects thought patterns and how much stress people experience in the environment. (Larson & Daniels, 1998, p. 180)

They also define counseling self-efficacy as "one's beliefs or judgments about his or her capabilities to effectively counsel a client and that counselor self-efficacy relates to counselor anxiety, performance and experience in supervision" (Larson & Daniels, 1998, p. 180).

Stable counselor characteristics, other personal agency variables, counselor performance, and counselor's perceived environment were reviewed and applied to the relationship of counselor self-efficacy. Stable counselor characteristics were listed as counselor personality, aptitude, achievement, social desirability, and counselor age. These characteristics were the most widely researched and correlated with counselor self-efficacy. Other personal agency variables were defined as outcome expectancies, affective arousal, and self-evaluation. These variables are actually proximal to the

counselor's actions with clients and they interact with the counselor's actions as the counselor works with the client. Counselor self-efficacy is believed to be a central part of personal agency. Specifically, outcome expectancies, affective arousal, and self-evaluations and counselor attributions have been the most studied.

The third area, counselor performance, is a cognitive mediation between the counselor and the supervisor. The perceptions of the counselor and supervisor are the most researched areas. They can involve areas of the counselor's self-perception of performance, supervisor's perception of counselor performance, and the crucial feedback process of both counselor and supervisor.

Lastly, counselor's perceived environment involves two areas: (1) the perceived environment, which is the counselor's, client's, or supervisor's perceptions; and (2) the objective environment which includes what was actually said.

These four areas have been integrated into the social-cognitive theory by a variety of researchers (Larson & Daniels, 1998).

Larson and Daniels (1998) translated the social-cognitive theory (Bandura, 1977b, 1993) into use with counselor training and counselor self-efficacy. "Counselor self-efficacy beliefs are the primary causal determinants of effective counseling action and these beliefs are hypothesized to affect choice of counselor responses, effort expenditure, and persistence in the face of failures, and risk-taking behaviors" (Larson & Daniels, 1998, p. 180). The authors elaborate further by incorporating Bandura's (1977b, 1993) social-cognitive research, and stating, "Self-efficacy beliefs are expected to affect counseling actions through the mediating influences of other self-generated processes, namely, affective processes, motivational processes and other cognitive processes" (Larson & Daniels, 1998, p. 181). The most researched area within these processes is counselor trainee anxiety (Crutchfield & Borders,

1997; Daniels, 1997; Jafari, 1987; Johnson, 1985; Johnson, Baker, Kopala, Kiselica, & Thompson, 1989; Kopala, 1987; Larson et al., 1993; Munson, Stadulis, & Munson, 1986; Munson, Zoerink, & Stadulis, 1986). If we apply the social-cognitive theory to counselor education, specifically anxiety, it is suggested that persons with a higher self-efficacy view their anxiety as a challenge, manifest the ability to set realistic and challenging goals, and self-examine with a positive framework (Larson & Daniels, 1998). These self-generated characteristics are what Bandura (1977b, 1993) calls personal agency: a dynamic, interactive and complex system that allows humans to be responsive to a changing environment and to utilize positive self-examination to understand that environment.

Larson and Daniels (1998) reached several conclusions and recommendations for counselor educators and for future research. The authors believed much more research is needed with the counselor self-efficacy construct. They believe this construct needs to be integrated with other constructs that are based in the social cognitive framework. Larson and Daniels also believed the research needs to have more emphasis on the important constructs in the social cognitive model. Anxiety is one of the most important constructs, and more refinement with respect to validity and reliability of outcome expectancy measures needs to occur. There is also a need to develop more multiple subskills to manage the changing circumstances of the often unpredictable, stressful situations found in counseling. Furthermore, there is a need to be able to measure the effectiveness of these multiple subskills. The authors make specific recommendations to continue investigating the relationship of counselor self-efficacy to other personal agency variables, such as anxiety, emotional exhaustion, depersonalization, and personal accomplishment, and to continue investigating the relationship of counselor self-efficacy to the perceived supervision and counseling

environment. The authors also believe that development of measures that assess cognitive processing of the counselor trainees, rather than just measuring their delivery of specific microskills, would provide extremely important information to counselor educators.

To conclude, counseling self-efficacy and health locus of control have a similar basis in self-awareness and self-development. Self-efficacy is defined as the ability of the counselor trainee to believe in his or her ability to be effective as a counselor. Health locus of control also has a basis in self-development, where the individual (counselor trainee) invests into some form of self-efficacy belief(s) in order to make health choices. It could be projected that counseling students, in general, believe they have the ability to be effective counselors, hence their desire to become counselors. Through this choice-making they have invested in a belief system about themselves. How much this generalized belief system is predicated on health beliefs is unknown. Since there is limited research that addresses health locus of control and college students in the general sense, it is unknown whether counseling students have established their health locus of control beliefs prior to enlisting in counselor training or as a result of their training.

From the preceding discussion, a number of questions emerge. Is the development of health locus of control part of the beliefs within the counselor education process? When comparing beginning counseling students and advanced counseling students with experience counseling, will there be a significant difference between their health locus of control beliefs? Will advanced counseling students have a tendency towards an internal locus of control when compared to beginning students? Furthermore, by selecting four symptom classifications—**anxiety, depression, interpersonal sensitivity, and somatization**—and ascertaining if these



classifications occur in beginning and advanced students, will these symptoms effect the proposed difference between the health locus of control?

### **Definition of Terms**

The health locus of control is a construct termed by Wallston et al. (1976) indicating individuals' belief that their health is or is not determined by their behavior. Individuals with an internal health locus of control believe their health is largely determined by their own behavior. With external locus of control, individuals believe their health is determined more by chance, fate, or powerful others.

The four symptom classifications are defined as anxiety, depression, interpersonal sensitivity, and somatization taken from the SCL-90-R®<sup>1</sup> instrument to be used as a covariant to the HLCS.

CAM is the acronym for complementary–alternative medicine, which includes various health-related treatments not associated with allopathic medicine.

---

<sup>1</sup> “SCL-90-R” is a registered trademark of Leonard R. Derogatis, PhD.

## **CHAPTER II**

### **METHOD**

#### **Population and Sample**

Identification of a population and sample was a crucial step in designing a study examining differences between beginning and advanced counselor education students. Approval to conduct this study was obtained from my doctoral committee, and permission to proceed with the study was obtained from the Human Subjects Institutional Review Board, Western Michigan University (Appendix A). Access to the population and sample of purposeful participants was obtained through instructors teaching in the graduate program offered by the Department of Counselor Education and Counseling Psychology, Western Michigan University.

#### **Population**

The population of participants for this study was defined as master's-level students enrolled in the Department of Counselor Education and Counseling Psychology, Western Michigan University, during the summer session and fall semester of 1999. The participants consisted of two samples of students, one enrolled in CECP 601 Introduction to Research, and one in CECP 612 Counseling Practicum. The students enrolled in Introduction to Research were identified as beginning counselor education students, and Counseling Practicum enrollees were identified as advanced counselor education students. Thus, two samples were purposefully

selected that represented students near the beginning of their programs and students near the end of their 48-hour programs.

### **Sample**

The present study took place during the research and practicum class meetings. Permission to use the research class was obtained by contacting the instructor of record and providing an explanation of the content and purpose of the study. Agreement was made as to the time and date of data collection. The practicum class had six sections due to the experiential format of the class. Letters were written to each of the instructors explaining the content and purpose of the study (Appendix B). Signatures of the six instructors were obtained indicating 100% participation. The last scheduled class of the semester was agreed upon for data collection for both groups.

The participants in both research and practicum classes were administered a demographic form designed by the researcher (Appendix D); the Health Locus of Control Scale (HLCS; Wallston, Wallston, Gordon, & Maides, 1974; noncopyrighted public domain; Appendix E); and the Symptom Checklist-90-R (SCL-90-R; Derogatis, 1994; Appendices F and G) during class time. Informed consent was obtained following the standards established by the Western Michigan University Human Subjects Institutional Review Board (Appendix C). Participants were instructed to carefully read each question and select an answer on each item. The participants were also asked to respond to each item independently when making their choices and not to become influenced by their previous choices.

## **Instruments**

**There were three instruments administered to each of the two groups of participants.**

**The demographic form was used to obtain each participant's age, gender, racial and ethnic origin; to identify any acute or chronic medical condition; and to provide the number of credit hours completed to date. It was hypothesized there could be an effect on the participant's health locus of control if the participant had either an acute or chronic medical condition.**

**The HLCS measures individuals' belief that their health is or is not determined by their behavior. The internal and external control belief follows the same concept as Rotter's locus of control concept. Individuals with an internal health locus of control believe their health is largely determined by their own behavior. With external locus of control, individuals believe their health is determined more by chance, fate, or powerful others (Wallston & Wallston, 1978). The HLCS is a self-report instrument of 11 items and is scored by a 6-point Likert scale with the following categories: "strongly disagree," "moderately disagree," "slightly disagree," "slightly agree," "moderately agree," and "strongly agree." No special provisions are necessary for administration or scoring.**

**Initial test-retest reliability scores for the HLCS were obtained from a sample of 22 women involved in an 8-week weight reduction program. The correlation between the test-retest HLCS scores for these women was  $r = 0.71$ . Additional reliability characteristics of the instrument were derived from four college student groups from one community sample. Each group had approximately 100 participants, and the coefficient alpha for these samples varied from 0.40 to 0.72 (Wallston et al.,**

1976). The test-retest reliability coefficients are not in the desirable range of 0.80 to 0.90 as suggested by Anastasi (1982).

The SCL-90-R is a 90-item self-report symptom inventory designed to reflect the psychological symptom patterns of the test takers. This inventory has been used to reflect the psychological symptom patterns of community, medical, and psychiatric respondents. Each question is rated on a 5-point Likert format ranging from "Not at all" to "Extremely." The SCL-90-R is scored and interpreted in terms of nine primary symptom dimensions and three indices of distress. The primary symptom patterns are (1) somatization, (2) obsessive-compulsive, (3) interpersonal sensitivity, (4) depression, (5) anxiety, (6) hostility, (7) phobic anxiety, (8) psychoticism, and (9) paranoid ideation. The three indices are (1) global severity index, (2) positive symptom distress index, and (3) positive symptom total. The SCL-90-R test measures the current, point-in-time, psychological symptom status. It is not a personality measure, except for indirectly measuring some certain personality types, or Axis II disorders, that may manifest a characteristic profile on the primary symptom classifications (Derogatis, 1994). Indices of symptomatology and psychological distress, which add precision to the design, are part of the test's construction. The internal consistency and test-retest coefficients reported were derived from a sample of 94 heterogeneous psychiatric outpatients assessed during an initial evaluation and reassessed 1 week later. The coefficients were listed between 0.80 and 0.90 (Derogatis, 1994). The reliability coefficients provided are in the desirable range of 0.80 to 0.90.

### **Statistical Hypotheses**

Six questions were formulated for analysis of the data. The first four questions asked if there is a relationship between beginning and advanced counseling students with regards to anxiety, depression, somatization, and interpersonal sensitivity. Question 5 asked if there is a difference between the HLCS scores of beginning and advanced counseling students. The sixth question was formulated from a post hoc analysis using the four symptom classifications as covariant to the HLCS. From the six questions, six hypotheses were developed.

*Hypothesis 1:* There is a significant difference in anxiety scores between beginning counseling and advanced counseling students.

*Hypothesis 2:* There is a significant difference in depression scores between beginning counseling and advanced counseling students.

*Hypothesis 3:* There is a significant difference in somatization scores between beginning counseling and advanced counseling students.

*Hypothesis 4:* There is a significant difference in interpersonal sensitivity scores between beginning counseling and advanced counseling students.

*Hypothesis 5:* There is a significant difference between the HLCS of beginning counseling students when compared to advanced counseling students.

*Hypothesis 6:* A post-hoc analysis performed was on the symptom classifications. The four symptom classifications were compared to the HLCS scores to determine if there were any correlations and a multiple regression analysis was performed.

There is a significant influence of the four symptoms classifications when compared to the HLCS.

Testable null forms of the research hypotheses are stated in Chapter III. A  $t$  test was performed on the first five null hypotheses with a confidence level of  $p \leq .05$  employed to determine significance.

## **CHAPTER III**

### **RESULTS**

#### **Introduction**

**In the present study, two groups consisting of 58 volunteer participants comprised the samples for study. The beginning counseling group consisted of 30 students, all of whom (100%) participated in the study. There were 30 possible advanced counseling students in the practicum group, and 28 (98%) volunteered to participate. No incentives to encourage participation were offered to either group. The groups were purposely selected from classes offered in the Department of Counselor Education and Counseling Psychology at a large Midwestern university. The beginning master's group consisted of counseling students enrolled in a required course, Introduction to Research, usually taken early in a student's program. This class was selected to represent beginning counseling students and met during the summer session and fall semester of 1999. The practicum group, comprised of advanced counseling students enrolled in a first practicum course taken by application late in a student's program, was selected to represent advanced counseling students and also met in the summer session and fall semester of 1999.**

#### **Description of the Samples**

**After consent was obtained from the course instructors and agreement was reached on a specific class period to collect the data, a demographic form, the Health**



Locus of Control Scale (HLCS), and the Symptom Checklist 90-R (SCL-90-R) were administered to the participants.

A demographic form (Appendix D) was given to each group, requesting information about participants' age, gender, ethnic origin, credit hours completed to date, and their self-reports of acute or chronic medical conditions.

Inspection of the data in Table 1 indicates a large difference between the credit hours of beginning students and advanced students. The range of credit hours is 3–34 for the beginning group and 35–49 for the advanced group. Mean credit hours are 8.73 for the beginning counseling students and 38.1 for the advanced counseling students, which was anticipated and established significant differences in credit hours for the experimental groups. The range of age is 21–52 for the beginning group and 24–57 for the advanced group. As evidenced in Table 1, the mean age for the participants is the same for both groups; thus, no differences attributed to age were expected.

**Table 1**

**Mean Credit Hours, Standard Deviations, and Mean Ages of the Participants**

	<i>N</i>	Mean Credit Hours	Credit Hours Std Deviation	Mean Age
<b>Beginning Counseling Students</b>	30	8.73	8.26	33
<b>Advanced Counseling Students</b>	28	38.1	3.90	33

As seen in Table 2, there was a higher percentage of females than males in the two groups, and a higher percentage of whites versus nonwhites. The nonwhite

population was comprised of 3.4% African-American, 5.2% Asian, and 1.7% Latino. The raw data for the gender and ethnicity are similar for both counseling groups, with a predominance of white females representing the population.

**Table 2**  
**Gender and Ethnic Origin Raw Data of the Participants**

	<i>N</i>	Gender	Ethnic Origin
Beginning Counseling Students	30	F = 23 M = 7	W = 26 NW = 4
Advanced Counseling Students	28	F = 21 M = 7	W = 25 NW = 3

The participants in both groups were asked if they had an acute or chronic medical condition to ascertain if there could be an association between these conditions and testing instruments.

As evidenced in Table 3, only 1 participant in the beginning counseling group reported an acute medical condition, which was not identified. No participants in the advanced counseling group reported any acute medical problem; therefore, acute conditions were not applied in the final analysis of the data.

In Table 4, it is evident that a greater number of participants in the beginning counseling group reported a chronic medical condition than did participants in the advanced counseling group. Within the beginning counseling group, 13.3% reported hypertension, 3.3% reported chronic fatigue, 3.3% reported hepatitis C infection, 3.3% reported allergies, 6.7% reported blood dyscrasia, 3.3% reported arthritis, 3.3% reported ear disorder, and 3.3% reported hypothyroid. Within the advanced

Table 3

**Acute Medical Condition Responses and Percentages for the Participants**

	Yes	No	Total
<b>Beginning Counseling Students</b>			
Number	1	29	30
% Within Group	3.3	96.7	100
% of Total	1.7	50	51.7
<b>Advanced Counseling Students</b>			
Number	0	28	28
% Within Group	0	100	100
% of Total	0	48.3	48.3
<b>Total</b>			
Number	1	57	58
% Within Group	1.7	98.3	100
% of Total	1.7	98.3	100

Table 4

**Chronic Medical Condition Responses and Percentages for the Participants**

	Yes	No	Total
<b>Beginning Counseling Students</b>			
Number	12	18	30
% Within Group	40	60	100
% of Total	20.7	31	51.7
<b>Advanced Counseling Students</b>			
Number	2	26	28
% Within Group	7.1	92.9	100
% of Total	3.4	44.8	48.3
<b>Total</b>			
Number	14	44	58
% Within Group	24.1	75.9	100
% of Total	24.1	75.9	100

counseling group, 3.6% reported a mood disorder, and 3.6% did not name the chronic medical condition. Since these percentages were not significantly high, they were not considered important to the final analysis.

### Analysis of Data

Six hypotheses were formulated for analysis of the data. The first four hypotheses suggest a relationship between beginning and advanced counseling students with regards to anxiety, depression, somatization, and interpersonal sensitivity. The fifth hypothesis suggests a significant difference between the HLCS scores of the beginning and advanced counseling students. The sixth hypothesis was formulated from a post hoc analysis using the four symptom classification as a covariant to the HLCS.

The following four null hypotheses were used to test differences in symptom classification.

*H<sub>01</sub>*: There is no significant difference in somatization scores between beginning counseling and advanced counseling students.

*H<sub>02</sub>*: There is no significant difference in interpersonal sensitivity scores between beginning counseling and advanced counseling students.

*H<sub>03</sub>*: There is no significant difference in depression scores between beginning counseling and advanced counseling students.

*H<sub>04</sub>*: There is no significant difference in anxiety scores between beginning counseling and advanced counseling students.

In Table 5, the means were derived from raw scores by first summing the values for the item responses in each of the four symptoms classification in the SCL-90-R. The sum for each symptom was then divided by the number of endorsed items

in the symptom classification, which resulted in the means being reported in decimal form. The results displayed in Table 5 indicate there was a significant difference between the symptom classification of depression and the beginning and advanced counseling students, with the beginning counseling students exhibiting significantly more symptoms of depression. There was also a significant difference between the symptom classification of anxiety and the beginning and advanced counseling groups, with the beginning counseling group exhibiting significantly more symptoms of anxiety. The finding was not surprising because those variables tend to be highly correlated.

Table 5  
Symptom Classification Means, Standard Deviation, and *t* Score

	<i>N</i>	Mean	Standard Deviation	<i>t</i>	<i>df</i>	<i>p</i>
SCL-90-R/Som						
Beginning	30	.60	.38	1.95	56	.057
Advanced	28	.41	.38			
SCL-90-R/I-S						
Beginning	30	.81	.87	1.94	49.2	.06
Advanced	28	.44	.55			
SCL-90-R/Dep						
Beginning	30	.86	.66	2.68	56	.01
Advanced	28	.47	.41			
SCL-90-R/Anx						
Beginning	30	.61	.47	2.60	56	.012
Advanced	28	.33	.34			

Note.  $p < .05$ .

$H_{05}$ : There is no significant difference between the HLCS of beginning counseling students when compared to advanced counseling students.

As presented in Table 6, the mean of the beginning counseling students was 28.63, and the mean of the advanced counseling students was 30.27. The standard deviation of the beginning counseling students and the advanced counseling was 6.71 and 5.54, respectively. Inspection of the standard deviations indicates little variability among the health locus of control scores of both groups.

Table 6  
Mean, Standard Deviation, and *t* Scores of HLCS

	<i>N</i>	Mean	Standard Deviation	<i>t</i>	<i>df</i>	<i>p</i>
Total HLCS						
Beginning	30	28.6	6.7	-.985	54	.329
Advanced	28	30.3	5.5			

*Note.*  $p < .05$ .

With an alpha level of  $p \leq .05$ , the difference between the beginning and advanced training groups on the HLCS was not statistically significant,  $t = -.985$ ,  $p = .329$ . Therefore, the null hypothesis was not rejected.

It was theorized that the participants in each training group could have psychological symptoms that could effect differences between groups on the HLCS. Anxiety, depression, interpersonal sensitivity, and somatization were the four symptom classifications selected from the SCL-90-R to act as covariates to the HLCS scores.

*H<sub>06</sub>*: There is no significant influence of the four symptom classifications when compared to the HLCS.

As can be seen in Table 7, none of the SCL-90-R symptom classifications were significantly correlated to the HLCS scores. However, the symptom classification scores were highly correlated to each other.

**Table 7**  
**Pearson Correlation of Total HLCS to Symptom Classification**

	<b>Total HLCS</b>	<b>SCL-90-R Som</b>	<b>SCL-90-R I-S</b>	<b>SCL-90-R Dep</b>	<b>SCL-90-R Anx</b>
<b>Total HLCS</b>	1.00	-.18	-.06	-.02	-.15
<b>SCL-90-R Som</b>			.51*	.60*	.51*
<b>SCL-90-R I-S</b>				.90*	.80*
<b>SCL-90-R Dep</b>					.81*
<b>SCL-90-R Anx</b>					

\* $p < .01$ .

As displayed in Table 8, there was no significant relationship between a linear combination of the four symptom classification variables and the total health locus of control scores.

Table 8

**Summary of Multiple Regression Analysis With the Total HLCS  
and SCL-90-R Symptom Classifications**

Variable	$R$	$R^2$	Adjusted $R^2$	$F$ for the Equation	$R^2$ Change	$F$ Change	Zero Order Correlation
SCL-90-R Som	.183	.034	.016	1.941	.034	1.941	-.18
SCL-90-R Dep	.212	.045	.010	1.293	.011	.657	-.06
SCL-90-R Anx	.298	.089	.038	1.753	.044	2.599	-.02
SCL-90-R I-S	.298	.089	.020	1.294	.000	.013	-.15



## **CHAPTER IV**

### **CONCLUSIONS AND RECOMMENDATIONS**

#### **Summary**

**Groups of 30 beginning counseling students and 28 advanced counseling students were purposely selected in order to ascertain if there was a difference between the training groups in their health locus of control as measured by the Health Locus of Control Scale (HLCS). Four symptom classifications—anxiety, depression, interpersonal sensitivity, and somatization—were selected from the Symptom Checklist-90-R (SCL-90R) to determine if there were significant correlations between these symptom classifications and the two groups total health locus of control score.**

**Beginning counseling students were defined as students enrolled in an early required course, Introduction to Research, while advanced counseling students were defined as students enrolled in their first practicum course. The data collection occurred during scheduled class periods. The participants in both groups were administered a demographic form, requesting the participants' age, gender, race, credit hours completed to date, ethnic origin, and any acute or chronic medical conditions.**

**The HLCS measured the belief that health is or is not determined by behavior. Individuals with an internal health locus of control believe their health is largely determined by their own behavior, while external locus of control participants believe**

their health is determined more by chance, fate, or powerful others. The SCL-90-R is a 90-item self-report symptom inventory designed to reflect psychological symptom patterns of the test takers. The inventory has been used to measure the psychological symptom patterns of community, medical, and psychiatric respondents. Four symptom classifications—**anxiety, depression, interpersonal sensitivity, and somatization**—of this inventory were selected as relevant to the analysis.

The beginning counseling students had completed 8.73 credit hours and the advanced counseling students had completed 38.1 credit hours, indicating the advanced students completed more coursework. A higher percentage of females and whites were evident in both groups. Only 1 participant in the beginning counseling group reported an acute medical condition. Twelve participants in the beginning counseling group reported a chronic medical condition, and 2 participants reported a chronic medical condition in the advanced counseling group.

It was theorized that the participants in each training group could have either acute or chronic medical conditions or have some psychological symptoms that may affect scores on the HLCS. Anxiety, depression, interpersonal sensitivity, and somatization were the four symptom classifications chosen from the SCL-90-R to act as covariates to the HLCS of the two groups. *t* tests performed on the two groups indicated there was significant difference between anxiety and depression, with the beginning counseling students exhibiting significantly higher levels of anxiety and depression than the advanced counseling students. A Pearson correlation was performed to see if the symptom classifications were correlated to the HLCS total scores. None of the symptom classifications were correlated to the HLCS scores; however, the four symptom classifications were highly correlated to each other. The multiple regression analysis indicated there was no significant relationship between a

linear combination of the four symptom classification variables and the total HLCS scores.

The HLCS total mean score of the beginning counseling group was 28.6, and the advanced counseling group's mean was 30.3. The range of the total HLCS score is 11–66, with the higher the score the more external direction of the beliefs. Both groups appear to be toward the lower end of the range. Standard deviation scores of the beginning counseling group and the advanced counseling were 6.71 and 5.54, respectively. Results of the *t* test between the means of the training groups on the total HLCS indicated there was no statistical significance between the beginning and advanced training groups ( $t = -.985, p = .329$ ). Therefore, the null hypothesis was not rejected.

### Discussion and Conclusions

The small sample size resulted in a homogeneous group. This was a benefit to this longitudinal study. The mean age was the same in both groups, and the gender and ethnicity was predominantly white female. The credit hour variability was confirmed since the beginning and advanced groups were purposely selected. From the 58 total participants, only 1 participant reported an acute medical condition and did not name the condition; therefore, acute medical conditions did not affect the analysis. Regarding chronic medical condition, 12 participants from the total of 30 beginning counseling students reported a chronic medical condition. In the advanced counseling group, only 2 participants reported a chronic condition. The small homogeneous population makes it difficult to speculate this variable other than to chance. The beginning group either was more open with their responses, or, by chance, had more medical problems than the advanced group or were more obliged

to report the problems than the advanced group. The advanced group may have become more self-reflective as they progressed through the program. Heightened self-reflection may have provided the advanced students with self-awareness, which resulted in these students believing chronic medical problems were not interfering with their general life experiences; thus, they cope well and need not inform others of their condition.

The means and standard deviations of the total HLCS indicated little variability between the two groups. The *t* test between the HLCS and the training groups indicated no statistical significance. However, the mean scores of both training groups indicated the participants were neither internal nor external with regards to health locus of control when compared to the HLCS Manual scores that reported a total score range of 11–66, with the higher score indicating external beliefs.

There was no statistical significance between the total health locus of control and training groups; thus, the small sample size and homogeneity of the groups may contribute to the lack of significance. More importantly, health locus of control may not be an independent factor in the educational process of counselors, but a life process of experiences. According to the literature, health locus of control beliefs develop not from one or two significant experiences, but are formed from a variety of experiences that impact a person's life (Marks, 1998). It is possible that counselors in training, regardless of whether they are beginning or advanced, have not formulated their health locus of control beliefs prior to entering graduate school, and these beliefs tend to be behavior-specific beliefs. As previous research has stated, health locus of control beliefs tend to be significantly correlated with generalized beliefs, but not with specific behavioral beliefs. It can be speculated that counselor educators may

be assuming that generalized counselor training methods can be automatically applied to a wide range of counseling situations.

Literature reports that the HLCS does not have a consistently high reliability coefficient. The instrument is also based on a dichotomous variable of internal and external. Based on the previous discussion that health locus of control beliefs are formulated from a variety of characteristics in a person's life, it is possible that health beliefs cannot be defined within the broad dichotomy of internal and external. There may be multiple variables or subtypes that would help define the formulation of health belief differences between the training groups. Prospective counseling students, due to their interest in human behavior, may have explored health beliefs by personal examination, and this exploration has given them experience formulating internal focused beliefs. Counseling students, by nature of their interest in human behavior, may have a tendency towards an internal health locus of control.

The multiple regression analysis indicated no significant relationship between a linear combination of the four symptom classifications and the Health Locus of Control Scale scores. The four symptom classifications were so highly correlated to each other that there was no uniqueness to each symptom classification and the total score. With this study, it appears that health locus of control does not correlate with the psychological symptom classifications of anxiety, depression, interpersonal sensitivity, and somatization.

One significant relationship examined in this study was the symptoms of anxiety and depression in the training groups. Beginning counseling students indicated more anxiety and depression symptoms than the advanced students. The finding was not surprising, since research has shown that new experiences in a person's life tend to produce anxiety, and depression and anxiety tend to be highly

correlated. It can also be said that beginning students report increased anxiety due to the new experience of re-entering the collegiate atmosphere again. Re-entering the competitive, pressure-filled atmosphere of graduate school life can be overwhelming with beginning graduate students. The stressful experience can translate into a depressive mood. These students may also represent a nontraditional population, where the students have spouses, children, home, and work commitments to contend with on a daily basis. That duty roster in itself could produce anxiety and depression. Secondly, research supports the existence of added anxiety when students enroll in research method courses. It is possible the increased symptom of anxiety found in the beginning group was a result of this circumstance.

### **Limitations**

This study was limited due to the small population. There were also limitations with regards to the HLCS. The lack of statistical significance between the two groups HLCS scores may have been prevented with a much larger population. The HLCS defined as a dichotomy of external and internal beliefs may be too broad of an instrument to define the differences between a relatively homogeneous population of counseling students. The SCL-90-R may have also been too broad a measure of symptoms, whereas a specific measure of anxiety, depression, coping techniques, and relationship abilities may have been more sensitive.

### **Recommendations**

The population of counseling participants would need to be much larger. It is suggested that participants from several counseling programs throughout a larger region be obtained, so a more heterogeneous population could be obtained with

regard to age, gender, and ethnicity. Possibly defining the formulation of health belief variables, such as smoking, use of alcohol, nutrition, and exercise, would have more correlation to the health locus of control than psychological symptom classifications. With this research, in a general sense, it was expected that the psychological symptoms would correlate with the physiological symptoms; however, these symptoms did not correlate with health beliefs in general. It is possible that current instrumentation may not be sensitive enough for these variables to be simply correlated. It may be important to understand the defining variables associated with health beliefs, rather than focusing on the dichotomy of internal and external control, correlating the common variables of physiological and psychological symptoms, conditions, and coping processes.

**Appendix A**  
**Human Subjects Institutional Review Board**  
**Letter of Approval**



Human Subjects Institutional Review Board



Kalamazoo, Michigan 49006-3899

---

## WESTERN MICHIGAN UNIVERSITY

---

Date: 30 July 1999

To: Robert Betz, Principal Investigator  
Christina Minger, Student Investigator for dissertation

From: Sylvia Culp, Chair *Sylvia Culp*

Re: HSIRB Project Number 99-07-04

This letter will serve as confirmation that your research project entitled "A Comparison of Beginning and Advanced Counselor Education Students on the Health Locus of Control Scales" has been approved under the exempt category of review by the Human Subjects Institutional Review Board. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the application.

Please note that you may only conduct this research exactly in the form it was approved. You must seek specific board approval for any changes in this project. You must also seek reapproval if the project extends beyond the termination date noted below. In addition if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: 30 July 2000

**Appendix B**  
**Authorization for Research**

College of Education  
Counselor Education and Counseling Psychology

Kalamazoo, Michigan 49008-5195  
616 387-5100

---

## WESTERN MICHIGAN UNIVERSITY

---

7/14/99

RE: AUTHORIZATION FOR RESEARCH IN CECP601

I consent to permit Robert Betz, Ph.D., the principal investigator and Christina Minger, M.A., the student investigator to present their research to my CECP 601 class.

---

Dr. Joseph Oldz

**Appendix C**  
**Participant Consent Form**

WESTERN MICHIGAN UNIVERSITY  
H. S. I. R. B.  
Approved for use for one year from this date:  
JUL 30 1999  
*Sylvia Culp*  
HSIRB Chair

Western Michigan University  
Department of Counselor Education and Counseling  
Psychology

Comparison of Beginning and Advanced Counselor Education  
Students On the Health Locus of Control Scale  
Robert Betz, Ph.D. Principal Investigator  
Christina Minger, M.A. LPC Student Investigator

You are asked to participate in a research project entitled "Comparison of Beginning and Advanced Counselor Education Students On the Health Locus of Control Scale" designed to explore the relationship between health locus of control of beginning counseling students and advanced practicum students. Dr. Robert Betz and Christina Minger from Western Michigan University, Department of Counselor Education and Counseling Psychology will conduct this project. This project is conducted as part of the doctoral degree requirements for Christina Minger.

The research involves one demographic survey and two self-report instruments, which will take 15-30 minutes to complete. Your replies will be completely anonymous, so do not put your name anywhere on the forms. You may choose to not answer a question and simply leave it blank. If you choose not to participate in this project, please return the blank surveys to the student investigator present. Returning the forms indicates your consent for use of the answers you supply.

If you have any questions, you may contact Dr. Robert Betz at 387-5107, Christina Minger at 616 659-4468, Human Subjects Institutional Review Board at 387-8293 or the Vice President of Research at 387-8298.

This consent document has been approved for use for one year by the Human Subjects Institutional Review Board (HSIRB) as indicated by the stamped date and signature of the board chair in the upper right corner. You should not participate in this project if the corner does not have a stamped date and signature. Thank you.

**Appendix D**  
**Demographic Form**

## DEMOGRAPHIC SURVEY

1. AGE \_\_\_\_\_
2. MALE ☐ FEMALE ☐
3. PLEASE FILL IN YOUR RACIAL/ETHNIC IDENTIFICATION:  
  
\_\_\_\_\_
4. PLEASE IDENTIFY ANY ACUTE MEDICAL CONDITION  
  
None ☐ OR \_\_\_\_\_
5. PLEASE IDENTIFY ANY CHRONIC MEDICAL CONDITION  
  
None ☐ OR \_\_\_\_\_

**Appendix E**  
**Health Locus of Control Scale**



Wallston, Barbara S., Wallston, Kenneth A., Kaplan, Gordon D., and Maides,  
Shirley A.

# HEALTH LOCUS OF CONTROL SCALE (HLC)

This is a questionnaire to determine the way in which different people view certain important health-related issues. Each item is a belief statement with which you may agree or disagree. Beside each statement is a scale which ranges from strongly disagree (1) to strongly agree (6). For each item you are to circle the number that represents the extent to which you disagree or agree with the statement. The more strongly you agree with a statement, then the higher will be the number you circle. The more strongly you disagree with a statement, the lower will be the number you circle. Please circle only one number. This is a measure of your personal beliefs; obviously there are no right or wrong answers.

Please answer these items carefully but do not spend too much time on any one item. Be sure to answer every item. Also, try to respond to each item independently when making your choice; do not be influenced by your previous choices. It is important that you respond according to your actual beliefs and not according to how you feel you should believe.

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1. If I take care of myself, I can avoid illness.	1	2	3	4	5	6
2. Whenever I get sick it is because of something I've done or not done.	1	2	3	4	5	6
3. Good health is largely a matter of good fortune.	1	2	3	4	5	6
4. No matter what I do, if I am going to get sick I will get sick.	1	2	3	4	5	6
5. Most people do not realize the extent to which their illnesses are controlled by accidental happenings.	1	2	3	4	5	6
6. I can only do what my doctor tells me to do.	1	2	3	4	5	6
7. There are so many strange diseases around, that you can never know how or when you might pick one up.	1	2	3	4	5	6

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
8. When I feel ill, I know it is because I have not been getting the proper exercise or eating right.	1	2	3	4	5	6
9. People who never get sick are just plain lucky.	1	2	3	4	5	6
10. People's ill health results from their own carelessness.	1	2	3	4	5	6
11. I am directly responsible for my health.	1	2	3	4	5	6

**Appendix F**  
**Permission Letter for Reproduction of Items**  
**From the Symptom Checklist-90-R**



April 21, 2000

Christina Minger  
60961 Kuhlmeier Rd  
Centreville, MI 49032

Dear Ms. Minger:

National Computer Systems, Inc., being the exclusive publisher and distributor of the SCL-90-R® (Symptom Checklist -90-R) test, hereby grants you permission to reproduce up to three (3) items only from the SCL-90-R test in your dissertation entitled *A Comparison of Beginning in Advanced Counselor Education Students on the Health Locus of Control Scale*.

This grant of permission is subject to the following conditions:

1. A proper copyright notice on the page containing the test items shall state as follows:

Copyright © 1975 LEONARD R. DEROGATIS, PhD. Published and distributed exclusively by National Computer Systems, Inc., Minneapolis, MN 55440. Reproduced with permission by National Computer Systems, Inc.

2. The following trademark notice shall be included at least once in the volume where the trademark is used. The trademark shall be designated with a ® in its first use and should also be footnoted as shown below.

"SCL-90-R" is a registered trademark of Leonard R. Derogatis, PhD.

3. This grant of permission is non-exclusive and is not to be construed as granting you any rights other than the permission described above.
4. This permission is granted singularly for the dissertation entitled *A Comparison of Beginning in Advanced Counselor Education Students on the Health Locus of Control Scale*. Future revisions of the volume are not covered by this permission.

If you have any questions, please call me at (612) 939-5126.

Sincerely,

Kristie Heisick  
Product Manager

Assessments Division

5605 Green Circle Drive Minneapolis, MN 55343 612-939-5000

**Appendix G**  
**Sample Items From the Symptom Checklist-90-R**

**Sample Items from the Symptom Checklist-90-R®<sup>1</sup>**

	Not at all	A little bit	Moderately	Quite a bit	Extremely	HOW MUCH WERE YOU DISTRESSED BY:
2.	0	1	2	3	4	Nervousness or shakiness inside
17.	0	1	2	3	4	Trembling
39.	0	1	2	3	4	Heart pounding or racing

**Copyright © 1975 LEONARD R. DEROGATIS, PhD. Published and distributed exclusively by National Computer Systems, Inc., Minneapolis, MN 55440. Reproduced with permission by National Computer Systems, Inc.**

---

<sup>1</sup> "SCL-90-R" is a registered trademark of Leonard R. Derogatis, PhD.

## BIBLIOGRAPHY

- Achterburg, J. A., & Lawlis, G. F. (1990). *Health Attribution Test: User's guide*. Champaign, IL: Institute for Personality and Ability Testing, Inc.
- Anastasi, A. (1982). *Psychological testing*. New York: MacMillan.
- Astin, J. A., Shapiro, S. L., Lee, R. A., & Shapiro, D. H., Jr. (1999). The construct on control in mind-body medicine: Implications for healthcare. *Alternative Therapies*, 5, 42–47.
- Bandek, N. I., Marks, G., & Richardson, J. L. (1993). Role of health locus of control beliefs in cancer screening of elderly Hispanic women. *Health Psychology*, 12, 193–199.
- Bandura, A. (1977a). Self-efficacy: Toward a unifying theory of behavior change. *Psychological Review*, 84, 191–215.
- Bandura, A. (1977b). *Social learning theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist*, 37, 122–147.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist*, 28, 117–148.
- Bennett, P., Moore, L., Norman, P., Murphy, S., & Tudor-Smith, C. (1997). Health locus of control and value for health in smokers and nonsmokers. *Health Psychology*, 16, 179–182.
- Brandon, J. E., & Loftin, J. M. (1991). Relationship of fitness to depression, state and trait anxiety, internal health locus of control, and self-control. *Perceptual and Motor Skills*, 73, 563–568.
- Calnan, M. (1989). Control over health and patterns of health related behavior. *Social Science and Medicine*, 29, 131–136.
- Carlson, B., & Petti, K. (1989). Health locus of control and participation in physical activity. *American Journal of Health Promotion*, 3, 32–37.

- Chen, W. W. (1995). Enhancement of health locus of control through biofeedback training. *Perceptual and Motor Skills*, 80, 395–398.
- Crutchfield, L. B., & Borders, L. D. (1997). Impact of two clinical peer supervision models on practicing school counselors. *Journal of Counseling and Development*, 75, 219–230.
- Dalton, J. H. (1983). *Stressful life events, locus of control and social support networks as predictors of maladjustment and illness among college freshman*. Paper presented at the Annual Meeting of the Eastern Psychological Association, Philadelphia, PA.
- Daniels, J. A. (1997). *The influence of performance feedback and casual attributions upon ratings of counseling self-efficacy*. Unpublished doctoral dissertation, University of Nebraska, Lincoln.
- Dean, K. (1991). Relationships between knowledge and belief variables and health maintenance behaviors in a Danish population over 45 years of age. *Journal of Aging and Health*, 3, 386–406.
- Derogatis, L. R. (1994). *Symptom Checklist-90-R: Administration, scoring and procedures manual*. Minneapolis, MN: National Computer Systems, Inc.
- DeVellis, R. F., DeVellis, B. E., Wallston, B. S., & Wallston, K. A. (1980). Epilepsy and learned helplessness. *Basic and Applied Social Psychology*, 1, 241–254.
- Duffy, M. E. (1988). Determinants of health promotion in midlife women. *Nursing Research*, 37, 358–362.
- Egan, G. (1990). *The skilled helper*. Belmont, CA: Wadsworth.
- Husa, H. E. (1982). The effects of rational self-counseling on college students' locus of control. *Journal of College Student Personnel*, 23, 304–307.
- Ivey, A. E., Ivey, M. B., & Simek-Downing, L. (1987). *Counseling and psychotherapy*. Englewood Cliffs, NJ: Prentice-Hall.
- Jafari, M. F. (1987). *The effects of self-instructional training on the performance of counselor trainees with high and low self-efficacy*. Unpublished doctoral dissertation, Indiana University, Bloomington.
- Johnson, E., Baker, S. B., Kopala, M., Kiselica, M. S., & Thompson, E. C. (1989). Counseling self-efficacy and counseling competence in prepracticum training. *Counselor Education and Supervision*, 28, 205–218.
- Johnson, M. E. (1985). *The relative effects of self-observation versus self-modeling on counselor trainees' anxiety, recall, self-evaluation, self-efficacy expectations and counseling performance*. Unpublished doctoral dissertation, University of California, Santa Barbara.



- Kopala, M. (1987). *The impact of supervisory interventions on self-efficacy and anxiety of counselors: An evaluation of the single case design*. Unpublished doctoral dissertation, Pennsylvania State University.
- Kristiansen, C. M. (1987). Social learning theory and preventive health behavior: Some neglected variables. *Social Behavior*, 2, 73–86.
- Larson, L. M. (1998). The social cognitive model of counselor training. *The Counseling Psychologist*, 26, 219–273.
- Larson, L. M., & Daniels, J. A. (1998). Review of the counseling self-efficacy literature. *The Counseling Psychologist*, 26, 179–218.
- Larson, L. M., Daniels, J. A., Koraleski, S. F., Peterson, M. M., Henderson, L. A., Kwan, K. L., & Wennstedt, L. W. (1993). *Describing changes in counseling self-efficacy during practicum*. Paper presented at the annual convention of the American Association of Applied and Preventive Psychology, Chicago.
- Lau, R. R. (1982). Origins of health locus of control beliefs. *Journal of Personality and Social Psychology*, 42, 322–334.
- Lottes, C. R. (1995). *Does student behavior change as a result of taking health?* Washington, DC: Fund for the Improvement of Postsecondary Education.
- Marks, G., Richardson, J. L., & Graham, J. W., & Levine, A. (1986). Role of health locus of control beliefs and expectations of treatment efficacy in adjustment to cancer. *Journal of Personality and Social Psychology*, 51, 443–450.
- Marks, L. I. (1998). Deconstructing locus of control: Implications of practitioners. *Journal of Counseling and Development*, 76, 251–260.
- McNamara, J. R., & Szabo, I. (1983). *The prediction of interest in health promotion*. Unpublished manuscript.
- Muhlenkamp, A. F., Brown, N. J., & Sands, D. (1985). Determinants of health promotion activities in nursing clinic clients. *Nursing Research*, 34, 327–333.
- Munson, W. W., Stadulis, R. E., & Munson, D. G. (1986). Enhancing competence and self-efficacy of potential therapeutic recreators in decision making counseling. *Therapeutic Recreation Journal*, 20, 85–93.
- Munson, W. W., Zoerink, D. A., & Stadulis, R. E. (1986). Training potential therapeutic recreators for self-efficacy and competence in interpersonal skills. *Therapeutic Recreation Journal*, 20, 53–62.
- Norman, P. (1990). Health locus of control beliefs and preventive health behaviors. *Journal of the Institute of Health Education*, 28, 113–117.

- Norman, P. (1991). Social learning theory and the prediction of attendance at screening. *Psychology and Health*, 5, 231-239.
- Norman, P. (1995). Health locus of control and health behavior: An investigation into the role of health value and behavior specific efficacy beliefs. *Personality and Individual Differences*, 18, 213-218.
- Pekarik, G. (1986). "Rationality" as a moderator between life events and illness. *Journal of American College Health*, 34, 170-173.
- Pinkard, C. M., & Gross, P. (1984). Modification of locus of control among rehabilitation counseling graduate students. *Rehabilitation Counseling Bulletin*, 28, 39-45.
- Rauckhorst, L. M. (1987). Health habits of elderly widows. *Journal of Gerontological Nursing*, 13, 19-22.
- Redeker, N. S. (1988). Health beliefs, health locus of control and the frequency of practice of breast self-examination in women. *Journal of Obstetric, Gynecologic and Neonatal Nursing*, 18, 45-51.
- Rotter, J. B. (1954). *Social learning and clinical psychology*. Englewood Cliffs, NJ: Prentice-Hall.
- Rotter, J. B. (1966). Generalized expectancies for internal and external control of reinforcement. *Psychological Monographs: General and Applied*, 80, Whole No. 609.
- Selby, R., Weinstein, H. M., & Bird, T. S. (1990). The health of university athletes: Attitudes, behaviors and stressors. *Journal of American College Health*, 39, 11-16.
- Slenker, S. E., Price, J. H., & O'Connell, J. K. (1985). Health locus of control of joggers and nonexercisers. *Perceptual and Motor Skills*, 61, 323-328.
- Strickland, B. R. (1978). Internal-external expectancies and health related behaviors. *Journal of Consulting and Clinical Psychology*, 46, 1192-1211.
- Thomas, L., & Thompson, B. (1994). *Perceptions of control over health: A confirmatory LISREL construct validity study*. Paper presented at the annual meeting of the Mid-South Educational Research Association, Nashville, TN.
- Tolar, A. (1978). Some antecedents and personality correlates of health locus of control. *Psychological Reports*, 43, 1159-1165.
- Toner, J. B., & Manuck, S. B. (1979). Health locus of control and health-related information seeking at a hypertension screening. *Social Science and Medicine*, 13A, 823-825.

- Waller, K. V., & Bates, R. C. (1992). Health locus of control and self-efficacy beliefs in a healthy elderly sample. *American Journal of Health Promotion*, 6, 302–309.
- Wallston, B., Wallston, K. A., Kaplan, G. D., & Maides, S. A. (1976). Development and validation of the health locus of control (HLC) Scale. *Journal of Consulting and Clinical Psychology*, 44, 580–585.
- Wallston, B. S., Wallston, K. A., Gordon, D., & Maides, S. A. (1974). *Health Locus of Control Scale*. (ERIC Document Reproduction Service No. ED 171 763)
- Wallston, K. A. (1989). Assessment of control in health care settings. In A. Steptoe & A. Appels (Eds.), *Stress, personal control and health*. London: Wiley.
- Wallston, K. A. (1992). Hocus-pocus, the focus isn't strictly on locus: Rotter's social learning theory modified for health. *Cognitive Therapy and Research*, 16, 183–199.
- Wallston, K. A., & Smith, M. S. (1994). Issues of control and health: The action is in the interaction. In G. Penny, P. Bennett, & M. Herbert (Eds.), *Health psychology: A lifespan perspective*. London: Harwood.
- Wallston, K. A., & Wallston, B. S. (1978). Development of the multidimensional health locus of control (MHLC) scales. *Health Education Monographs*, 6, 160–170.
- Weiss, G. L., & Larsen, D. L. (1990). Health value, health locus of control, and the prediction of health protective behaviors. *Social Behavior and Personality*, 18, 121–136.
- Wiegmann, S. M., & Berven, N. L. (1998). Health locus of control beliefs and improvement in physical functioning in a work-hardening, return-to-work program. *Rehabilitation Psychology*, 43, 83–100.
- Wiley, D. C., Gay, J., Jordan-Belver, C., Furney, S., Calsbeek, F., Benjamin, J., & Kathcart, T. (1996). *Journal of American College Health*, 44, 167–172.
- Winefield, H. R. (1982). Reliability and validity of the health locus of control scale. *Journal of Personality Assessment*, 46, 614–619.
- Wurtele, S. K., Britcher, J. C., & Saslawsky, D. A. (1985). Relationships between locus of control, health value and preventive health behaviors among women. *Journal of Research in Personality*, 19, 271–278.