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# THE RELATIONSHIP BETWEEN SPIRITUALITY AND THE HEALTH OF COLLEGE STUDENTS IN A UNIVERSITY SETTING

A Dissertation
Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

Linda Wyatt Nelms
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## DEDICATION

This dissertation is dedicated to my husband, John and my granddaughter, Allison Grace.

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## ABSTRACT

The purpose of this study was to examine the relationship between spirituality and the health of college students. Undergraduate students enrolled in Personal Health and Wellness classes at The University of Tennessee were selected to participate in the study. Two-hundred twenty-one students were administered two instruments: The College Student Appraisal of Risks Survey (The CARS) and the Spirituality Scale (SS). The CARS instrument was used to obtain descriptive statistics and specific health risk factors relating to the health of college students. The SS instrument was used to obtain the student's self-reported level of spirituality. Based upon a thorough literature review, there has been limited research into the relationship of the health of college students and their level of spirituality. This study does two things. First, it reports the development of a valid and reliable instrument to measure spirituality. Secondly, this study investigates the relationship between the self-reported level of spirituality and the health status of college students. The significance of the study is that this research is an important step toward understanding the role that spirituality plays in the various dimensions of health in young adults.

## TABLE OF CONTENTS


Chapter Page

I. **THE PROBLEM**
Introduction ....1
Statement of the Problem ....4
The Purpose of the Study ....5
Need for the Study ....6
Assumptions ....9
Delimitations ....9
Limitations ....10
Definition of Terms ....10
Chapter Summary ....11

II. **REVIEW OF LITERATURE**
Introduction ....13
Theoretical Framework: Holistic Wellness Model ....13
Research and Literature Related to Content ....17
Research and Literature Related in Methodology ....30
Research and Literature Related in Content and Methodology ....38
Introduction of Assessment Instruments Used in the Current Study ....50
Chapter Summary ....62

III. **METHODOLOGY**
Introduction ....64
Research Design....65
Derivation of Research Questions ....65
Study Population ....67
Instrumentation ....68
Variable List ....73
Data Collection ....73
Analysis of the Data ....78
Chapter Summary ....79

IV. **ANALYSIS, INTERPRETATION AND IMPLICATIONS OF THE DATA**
Introduction ....81
Demographic Descriptive Statistics ....81
Statistical Analysis of Research Questions ....89
Implications of the Study ....106
Chapter Summary ....114

V. **FINDINGS, CONCLUSIONS AND RECOMMENDATIONS**
Summary of Study ....115

Findings .....118
Conclusions .....121
Recommendations .....123
Recommendations for Future Research .....124
Chapter Summary .....125

VI. **THE STUDY IN RETROSPECT**…..…….126

**LIST OF REFERENCES**…..……...130

**APPENDIX** ……..……138

**VITA** ……161

## LIST OF TABLES


| Table | | Page |
|---|---|---|
| 1. | Descriptive Characteristics of Hettler's Six Dimensions of Wellness | 15 |
| 2. | Results of Internal Consistency Reliability Estimates of the 27-Item Spirituality Scale (SS) | 55 |
| 3. | Twelve Items Extracted From 27-Item Spirituality Scale (SS) | 55 |
| 4. | Results of Internal Consistency Reliability Estimates of the 12-Item Spirituality Scale (SS) | 56 |
| 5. | Results of Internal Consistency Reliability Estimates of the Spirituality Scale (SS) and the NEO Subscales | 60 |
| 6. | Demographical Questions Included on the Spirituality Scale (SS) | 71 |
| 7. | Results of Internal Consistency Reliability Estimates for 13-Item Spirituality Scale (SS) | 71 |
| 8. | Inter-Item Correlations in the Spirituality Scale (SS) | 71 |
| 9. | Mean Responses for 13-item Spirituality Scale (SS) | 72 |
| 10. | Variable List | 74 |
| 11. | Mean Score of Age Group | 83 |
| 12. | Percent and No. Responses of Age Group | 83 |
| 13. | Percent and No. Responses of Male and Female Students | 85 |
| 14. | Percent and No. Responses of Ethnic Groups Represented in the Study | 85 |
| 15. | Percent and No. Responses to Question D1, "When attending classes, where do you live? | 86 |
| 16. | Percent and No. Responses to Question D2, "What class/academic level are you in now? | 88 |
| 17. | Percent and No. Responses to Question D3, "What is the level of education of your mother?" | 88 |
| 18. | Percent and No. Responses to Question D4, "Which of the following best describes your current health?" | 90 |
| 19. | Descriptives Reporting Participant's Self-Reported Level of Spirituality and Self-reported Current Health Status | 92 |
| 20. | ANOVA Reporting for Participant's Self-Reported Level of Spirituality by Current Health Status | 92 |
| 21. | Tukey HSD Post Hoc Test Reporting Homogeneous Group Differences Between Participant's Self-Reported Level of Spirituality by Current Health Status | 94 |
| 22. | Descriptives Reporting Participant's Self-Reported Level of Spirituality and Overall Physical Health | 96 |
| 23. | ANOVA Reporting for Participant's Self-Reported Level of Spirituality by Overall Physical Health | 96 |
| 24. | Tukey HSD Post Hoc Test Reporting Homogeneous Group Differences Between Participant's Self-Reported Level of Spirituality by Overall Physical Health | 96 |
| 25. | Descriptives Reporting Participant's Self-Reported Level of Spirituality and Physical Activity | 98 |

## LIST OF TABLES (cont'd)


Table Page

26. ANOVA Reporting for Participant's Self-Reported Level of Spirituality by Physical Activity .....98
27. Tukey HSD Post Hoc Test Reporting Homogeneous Group Differences Between Participant's Self-Reported Level of Spirituality by Physical Activity …….. .....99
28. Descriptives Reporting Participant's Self-Reported Level of Spirituality by Life Satisfaction…… .....101
29. Descriptives Reporting Participant's Self-Reported Level of Spirituality by Life Losses or Problems .....103
30. Group Statistics Reporting Participant's Self-Reported Level of Spirituality and Tobacco Use……..... .....103
31. Descriptives Reporting Participant's Self-Reported Weekly Alcohol Consumption .....105
32. Descriptives Reporting Participant's Self-Reported Level of Spirituality and Racial Groups.....107

# CHAPTER I
# THE PROBLEM

## Introduction

The current investigation was conducted to determine if there was a relationship between spirituality and the health of college students. The past three decades have witnessed the rebirth of a historic and mutual association between spirituality and health, a partnership that has increasingly gained momentum while reinterpreting the concept of health. The World Health Organization (WHO) defines health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (pg. 100). Perrin and McDermott (1997) reinforce WHO's definition, expressing that health is not a passive state of being, but a dynamic process in which higher levels of wellness can be achieved. In defining health, Miller and Thoresen (1999) write,

> as wisdom is not merely the absence of ignorance, nor courage the absence of fear, so health is surely more than a lack of disease. A large component of health is subjective, which is what differentiates *disease* (a biomedical concept) from *illness* (subjective feeling states such as weakness, pain, or nausea). People may experience illness in the absence of detectable disease (a common problem in medical care) and can experience wellness despite terminal disease. Even a single continuum, ranging from perfect health to death, fails to capture the richness of experienced wellness (pg. 4).

In 1979, William Hettler introduced the Six Dimensions of Wellness, a multidimensional model of health and wellness including physical, mental, social,

occupational, intellectual and spiritual dimensions (Hettler, 2004, Cover page). Hettler's model broadens WHO's definition of health and firmly grounds recent research like that of Perrin and McDermott (1997) and Miller and Thoresen (1999) who acknowledge health as a more comprehensive and holistic concept. In the Holistic Wellness Model, Chandler, Holden and Kolander (1992) characteristically define Hettler's six dimensions of wellness as interrelational and interactive and introduce the dimension of spirituality, in partnership with a personal component, at the nucleus of this multidimensional exchange.

An extensive review of the literature revealed that spirituality and religious beliefs and practices serve an integral role within the arena of individual health and well-being. While the individual's self-reported level of spirituality was the primary focus, due to the associated similarities between religion and spirituality, addressing religious perspectives within the literature were important. Numerous studies that encompass both religious and spiritual components have done so under the auspices of religion, whereas religion is conceptualized as being both extrinsic, i.e. possessing traditional religious components and intrinsic, i.e. spiritual components. However, this paradigm for measuring religion has been criticized by psychologists of religion in recent years (Slater, Hall & Edwards, 2001).

Kolchakian and Sears (1999) report that individuals, who are extrinsically motivated, regard religion as a means to an end, such as meeting new people and finding a place to reside within society. In contrast, intrinsically motivated individuals perceive religion as a means within itself, whereas religion is embraced and valued for its contribution to one's life.

Particularly, the Seventh-Day Adventist, a devout and disciplined people, serve as an example of a religious denomination known to practice wholesome and healthful living and strive on the basic teachings that address religious liberty more than the civil mechanism used to achieve it. To this group of conservative Protestants, the human body is the temple of the Holy Spirit and members abstain from risky health behaviors, such as alcohol, tobacco and drug use. Likewise, sound principles of healthful living are advocated through healthy behavior, such as exercise, diet and philanthropic expectation (Hill, 1995). In the *Handbook of Religion and Health,* Koenig, McCullough and Larson (2001) cite over 1200 studies on religion and health and, according to the authors, many studies use measures that evaluate one's level of religiosity from a spiritual perspective as well as from the context of religious beliefs and practices.

Spirituality is relevant when addressing an individual's state of health and well-being. Described as an article of faith, spirituality is "a right relationship with all that is" (Kaiser, 2002). People who trust in a relationship between physical health and spiritual attainment acknowledge the concept of 'the Divine within', "the belief that an element or quality of the Supreme Being dwells inside every human" (Dossey, 1993, pg. 15). Spirituality, a phenomenon once considered a subset of religion, now is recognized for that which encompasses religion (Levin, 2001). However, for many, a universal definition of spirituality that comprises both religious and non-religious perspectives is advocated (Anandarajah & Hight, 2001).

Papenfuss (1991) questions if there should not be a quintessential obligation to address fundamental values comprising one's spiritual nature when seeking to promote health and well-being among individuals. Experts in the field of health promotion

recognize that there must be a reconnection with values that add meaning and worth to one's life to combat health-related risk behaviors (Buchanan, 2000).

The college student population has health problems proportionately designated as their own, particularly health issues associated with the college environment itself. In addition, because college students are members of a special group whereas society has invested heavily, there is a responsibility for these students to become leaders of thought in the process of preserving the conceptualization of family and community health (Diehl & Shepard, 1939).

Institutions of higher learning are beginning to understand the importance of the relationship between health and spirituality. The role of religious habits and attitudes are being addressed that were once ignored by academic leaders in an attempt to advance the students' inner development, a sphere, in which, spirituality resides (Coday, 2003). More importantly, Jackson and Weintein (1997) note the interrelation associated with that of the students' health and that of faculty and staff, as well as, the environment in which all coexist and recognizes that the campus community is not limited to any one but that the values, attitudes, and behaviors of each segment influence those of the others. In higher education, fostering individual and group health defines a balanced and enhanced health for all.

## Statement of the Problem

The problem for this study was whether or not college students, who hold some intrinsic value for the inclusion of spirituality in their life, experience a more positive health status than those students who do not regard spirituality as a significant component contributing to their individual health, well-being and quality of living. To the extent that

can be determined, there has been limited research into the relationship of the health of college students and their self-reported level of spirituality.

## The Purpose of the Study

The purpose of this study was to investigate the relationship between the health and well-being of college students and their self-reported level of spirituality. This relational study was cross-sectional in that observation of the participants was conducted at one point in time. The College Student Appraisal of Risks Survey (The CARS), a tool used to assess the level of risk of an individual developing certain health conditions was utilized, in conjunction with the Spirituality Scale (SS), a scale used to measure the individual's perceived level of spirituality.

The study was designed to provide information that may contribute toward the development and distribution of knowledge within the academic disciplines of health promotion and health education. According to Seedhouse (2001), one of the central conditions required for achieving health is the accessibility to the most information about all factors regarding health that influence a person's life. The procurement of such knowledge by higher education may facilitate proper training and broaden educational opportunities so that young adults are more successful in their quest for optimum health and wellness.

In order to address the purpose of this study, the following research questions were formulated:

1. What is the relationship of a self-reported level of spirituality and the current health status of college students?

2. What is the relationship of a self-reported level of spirituality and the overall physical health of college students?
3. What is the relationship of a self-reported level of spirituality to the physical activity of college students?
4. What is the relationship of a self-reported level of spirituality to the life satisfaction of college students?
5. What is the relationship of a self-reported level of spirituality to the tobacco-related health risk behaviors of college students?
6. What is the relationship of a self-reported level of spirituality to the alcohol-related health risk behavior of college students?
7. Are there significant group differences between African American and White college students and a self-reported level of spirituality?

## Need for the Study

The need for this study originated from research literature represented by professional and scholarly experts who recognize the growing relationship between spirituality and health. Richards, Rector, and Tjeltveit (1999) using Richards and Bergin (1997) state that an individual's spiritual world-views and values can have a significant impact on mental and physical health as well as interpersonal relationships. Cavendish et al (2001) expressly delineate the need for and examination of the significance of the role of spirituality and how it plays a part in the lives of well young adults, between the ages of 18 and 24, stating that this population has not been widely studied and our understanding of this age group has been limited. Mahon and Yarcheski (1998) add that young adults, more so than adolescents, possess the opportunity to undertake personal

responsibility for their health and health practices. However, the authors' acknowledge that the health practices of young adults are limited and this age-group lacks testing in health practice theories.

According to Grace (1997), college students experience higher numbers of person years of life lost from illnesses and injuries than any other population. The belief of this author is that such consequences would not be the case if this group altered risky health behaviors. Many fundamental reasons for the study of health issues in the college student population rest in the characteristics of the students and the university environment in which they reside. According to Diehl and Shepard (1939), the college student must discover ways to overcome or compensate for childhood educational and/or medical shortcomings, face health issues different from those previously experienced, learn what to do about acute illnesses in the absence of parents and physicians, seek out competent medical treatments, find reliable sources of medical information and distinguish between good and bad advice when resolving medical or emotional problems. The student must be responsible in discriminating matters such as nutrition, physical exercise, rest and other principles of healthy living.

Payne, Hahn and Mauer (2005) recognize other principles of health which include factors such as forming an initial adult identity, broadening social skills and nurturing intimacy. Individuality, identity, sense of social connectedness, being part of something greater and larger than life are several reasons that significantly introduce the person's level of spirituality into one's concept of health (Doswell, Kouyate & Taylor, 2003). All, of which, contribute directly to the college student and healthier university living.

Some health risk behaviors, currently placing the college student population at risk for physiological, emotional, intellectual and socially negative health effects include cigarette smoking, alcohol consumption and suicide. While the prevalence for cigarette smoking for college students has decreased in recent years from 21% to 14%, a recent study suggest an upward trend in cigarette use indicating an incidence of 36% in 2004 (Payne et al, 2005). Alcohol consumption negatively affects college students in a variety of ways. Examples of the physiological, emotional, intellectual and social effects of alcohol use include "drunk driving, physical violence, property destruction, date rape, police arrest, and lowered academic performance" (Payne et al, 2005, pg. 262). In addition, Payne and his colleagues cite that suicide is the third leading cause of death for young adults and that 30% of completed suicide attempts can be contributed to the use of alcohol.

Irrespective of the broad concept of health, health promotion and health education focus primarily on preventing diseases, illness and injury. Preventive measures that are guided by the United State's public health initiative, Healthy People 2010, the essence of which examines possible elimination of current health disparities while concentrating on specific, measurable objectives to increase the quality and years of life. The individual is informed of the negative effects of smoking tobacco, alcohol use and other important health-related risk behaviors, but according to Seedhouse (2001), this information should be considered as only a limited part of health education and health promotion.

According to Doswell et al (2003), the inclusion of spirituality in health promotion research is gaining wide acceptance. Health promotion research, training and program activities should be redirected toward

> strengthening people's capacity for reasoning wisely and cultivating greater mindfulness and civility, in practices that reintegrate means and ends. [Health education and health promotion] should engage in more participatory research, a process in which people come to understand themselves better and see more clearly what ought to be done to realize ends of their own choosing (Buchanan, 2000, pg. 134).

Ultimately, the need for this study focused on the significance regarding the limited investigation into the role of spirituality and its impact on the health of young adults.

## Assumptions

Several assumptions underlie this study.

1. The participants of the study are a representative sample of the college students from a university setting.
2. The participants of the study understood how to answer the questions posed by the self-reporting CARS health risk appraisal and responded truthfully to the questions posed in the questionnaire.
3. The participants of the study understood how to answer the questions posed by the SS spirituality scale and responded truthfully to the items posed in the scale.

## Delimitations

The study was subject to the following delimitations:

1. The study was confined to a convenience sample of college students who participated in a health course at The University of Tennessee.

2. The study was restricted to only those specific health areas extracted from the College Student Appraisal of Risks Survey (The CARS) and addressed in each of the research questions.

## Limitations

The study was subject to the following limitations;

1. The study was limited to self-reports that may not accurately depict the health status and risky health behaviors of the college student.
2. The study sample cannot be considered representative of the general college student population at The University of Tennessee.

## Definition of Terms

***College Students***

Persons enrolled in a four-year, public university.

***High-Risk Health Behavior***

A pattern of risky behavior, such as smoking and alcohol abuse, that is associated with a high risk of developing a chronic illness or injury (Payne, 2004).

***Life Satisfaction***

A condition experienced by one whose life is characterized as almost perfect and, given the opportunity, would change nothing about their circumstance.

***Personal Health and Wellness Course***

An introductory college level course designed to expand the student's knowledge on prevailing health issues and current health topics. The health information acquired by the student can be used to examine and potentially change risky health behaviors that may contribute to specific illness or disease.

***Physical Activity***

Any physical activity produced by continuous, repetitive bodily movement in the form of exercise, work or play that improves cardio-respiratory conditioning based on the American College of Sports Medicine (ACSM) recommendations which include the mode of activity, frequency, intensity and duration of training (Payne et al, 2004).

***Spirituality***

A belief system characterized as having a presence of God, Creator, or Higher Power serving as an inner voice, making life more meaningful, imparting a feeling of a higher purpose in life and contributing to an individual's level of health, well-being and quality of living.

***University***

A four-year institution of higher education consisting of various colleges awarding baccalaureate, master and doctoral degrees.

## Chapter Summary

Chapter I provided background information and addressed the purpose of this study which was to determine whether or not there was a relationship between spirituality and the health of college and university students. The purpose of the study and the research questions directed the study. In addition, the resurgence of research interest on the dimension of spirituality in various health-related settings, such as healthcare, health education and health promotion and its relationship to the health outcomes of college and university students was addressed. It was assumed that the participants of the study are a representative sample of the college students from a university setting. It was also assumed that the participants of the study understood how to answer the questions posed

by the questionnaires and responded in a truthful manner. Delimitation was presented in this chapter. Finally, a section of the chapter was delineated for defining terminology that would lead to a better understanding of the study.

Chapter II addressed the legitimacy of the research which contained a thorough review of the literature consisting of three sections: (1) research literature as it relates to content, (2) research literature as it relates to methodology and (3) research literature as it relates to content and methodology. The Holistic Wellness Model, a theoretical framework for the study, was introduced in this chapter. The development and validation of the Spirituality Scale (SS), subsequently named the NSS-1, was discussed. In addition, The College Student Appraisal of Risks Survey (The CARS) was introduced.

Chapter III provided a framework for the data collection of this study.

Chapter IV analyzed the data.

Chapter V presented the results of the data collection and the conclusions.

Finally, Chapter VI gave a retrospective glimpse of the study.

# CHAPTER II
# REVIEW OF LITERATURE

## Introduction

The purpose of this chapter was to conduct a review of the literature to consider the conceptual relevance of the relationship between spirituality and the health of college students in a university setting. After an extensive review of the related literature, defining characteristics of spirituality were presented to ascertain the effect of spirituality from a health perspective on various health risk behaviors and health outcomes.

The studies chosen for this chapter were allotted to the following three categories:

1. Literature related in content
2. Literature related in methodology
3. Literature related in content and methodology

## Theoretical Framework: Holistic Wellness Model

The general theoretical framework introduced for the study was the Holistic Wellness Model. This model was used to explain the importance and the interrelation of spirituality within the multidimensional domain of an individual's life. As suggested in the Holistic Wellness Model, the inclusion of the spiritual dimension within other constructs contributing to the overall health and well-being of the individual provides balance, countering asymmetry.

The Holistic Wellness Model is used to further explain the spiritual dimension of health. Using Hettler (1979, 1991), Chandler, Holden and Kolander (1992) conclude that health and wellness consist of six major dimensions: intellectual, emotional, physical, social, occupational, and spiritual. The authors surmise that, of the six dimensions,

despite emerging interest in health education, spirituality remains unclear and lacks definition. Chandler et al (1992) introduce the Holistic Wellness Model suggesting that

> spiritual health should be considered as a component present, along with a personal component, within each of the dimensions of wellness…. [Reinforcing that] this model is interrelated and interactive, with personal and spiritual components. Optimum wellness exists when each of these five dimensions has a balanced and developed potential in both the spiritual and personal realm. Working to achieve high-level wellness necessitates the development of the spiritual component in each of the five dimensions of wellness (pg. 171).

A closer examination of the characteristics of William Hettler's (2004) Six Dimensions of Wellness refines Chandler et al's (1992) application of the Holistic Wellness Model. See Table 1. By understanding Hettler's (2004) six dimensions of health, the application of the Holistic Wellness Model by Chandler et al (1992) is better understood. The integration of spirituality within the other dimensions of an individual's life plays a significant role in the individual's quality of life. Within the model, the spiritual dimension impacts other wellness dimensions, whereas without attending to the spiritual component within each dimension, the individual remains incomplete, having less than a harmonious life.

The Holistic Wellness Model demonstrates how the five dimensions established without the spiritual dimension may be unable to obtain and maintain positive health outcomes (Chandler et al, 1997). McGee, Nagel and Moore (2003) affirm that the literature makes a strong case for the significance of spirituality in relation to the overall

**Table 1. Descriptive Characteristics of Hettler's Six Dimensions of Wellness**

| Dimension | Wellness Characteristics |
|---|---|
| Physical | • Pursues physical endurance, exhibiting flexibility and strength<br>• Responsibly cares for oneself for minor illnesses while simultaneously recognizing the need for more advanced treatment by a medical professional.<br>• Capacity to monitor one's own vital signs, understand the relationship between nutrition and body function, aware of the body's true identity, feelings, anxiety patterns, reactions, balance and harmony<br>• Body formally expresses physiological development and personal improvement |
| Emotional | • Recognizes and accepts a broad range of feelings in one's self as well as others<br>• Expresses and manages feelings effectively playing a pivotal role in the selection process of personal choices and behaviors<br>• Open to personal development<br>• Functions autonomously yet values intrapersonal relationships<br>• Accept challenges, risks and conflict<br>• Approaches life positively and responsibly<br>• Recognizes emotional wellness as a continual process of change and growth |
| Social | • Actively participates in promoting a healthy environment<br>• Encourages communities to interrelate with one another<br>• Seeks to preserve the natural beauty of nature<br>• Practices harmonious living, positive interrelations and development of healthy sexual behaviors respective of others<br>• Makes life choices that will exhibit mutual respect and cooperation for everyone in the community in which one lives |
| Occupational | • Contributes personal unique skills and talents to produce a meaningful and rewarding product or service<br>• Involved in paid and non-paid labor and activities that contribute to the good of the community |
| Intellectual | • Possesses a propensity for self-directed behavior that includes acquiring, developing, applying and articulating critical thinking and expressive skills and abilities focused on achievement<br>• A life-long learner |

**Table 1. Continued**

| Dimensions | Wellness Characteristics |
|---|---|
| Spiritual | • Transcends oneself to question the meaning and purpose of life<br>• Questions one's surroundings<br>• Appreciates that which cannot be understood<br>• Seeks a harmonious life, intrinsically and extrinsically<br>• Experiences feelings of anguish and joy<br>• Tolerates opposites and contradictions<br>• Engages in the formulation of a worldview and system of values that give unity, purpose and goals to one's desires for life success |

Source: Hettler, W. (2004). Six Dimensions of Health. *Home Page of Bill Hettler, M.D.* Retrieved September 20, 2004, from http://www.hettler.com

health of the individual. Specifically, scholars agree that in order to improve other dimensions of health, a person must enhance one's level of spiritual health.

## Research and Literature Related in Content

### *Spirituality Defined*

In the nineteenth century, St. Theophan expressed the complexities of human life as multifaceted and described a life fully lived when in unison with the individual's physical, mental and spiritual dimensions. In St. Theophan's comparison of those mortal dimensions, a parallel was cast, whereas he related them to that of a machine possessing moving parts and any part of the machine not in motion, rendered the machine inactive. Hence, any aspect of an individual's life, not exercised, is a human life unlived.

Simply, he described the spirit of man as a "force which God breathed into man when he created him…a force which has come from God, knows God, seeks God, and in Him alone finds rest" (pg. 61, 62). St. Theophan continued, stating that the spirit resides within the individual, as a distinguishing feature, and differentiates between the human soul, of which rises a person above the earthly animal, and the human spirit, of which makes the individual a little less than the angels (St. Theophan, 1888/2000).

In a study of human development, Fowler (1981) produced a series of stages in the development of an individual's faith over the course of one's lifetime. The author explained the relationship between faith, religion and belief and offered faith as an insight into what an individual may be seeking when considering the purpose and meaning of life. His discussion on faith is characteristically similar to spirituality. Fowler uses the religionist W.C. Smith to describe faith as

> deeper, richer, more personal…engendered by a religious tradition…but it is a quality of the person, not the system…. Faith is a quality of human living. At its best it has taken the form of serenity and courage and loyalty and service: a quiet confidence and joy, which enables one to feel at home in the universe, and to find meaning in the world and in one's own life, a meaning that is profound and ultimate... (pg. 11).

Within the last three decades the research literature has become inundated with the prospect of reconnecting the spirit or spirituality to the overall health and well-being of the individual. A review of the literature revealed a vast audience of scholarly searches undertaking the task of recognizing a dimension of spiritual understanding and specific applications of spiritual living that the quality of human life might be advanced. Increasingly, the unidirectional view of the biomedical concept is adjunctively partnered with other viable dimensions to enhance overall health and wellness. "Once we have established reasonable concepts about man's makeup, we will have the most reliable indication as to how he is to live" (St. Theophan, 1888/2000, pg. 45).

A concrete definition of spirituality, as an intangible construct that it is, has confused and challenged today's experts in the field of spirituality. According to Kathleen Krebs (2001), spirituality is the practices, beliefs, and attitudes that a person has toward God or some other higher power giving the search for wholeness, meaning, and purpose to one's existence. Koenig (2002) suggests that being spiritual is who most individuals are as human beings as it gives significance and purpose to their lives. And in the context of health, Koenig (2000) concludes that neglecting an individual's spirituality is the same as ignoring their social environment or psychological state. In

turn, this neglect results in a failure to treat the whole person. Koenig identifies with the assertion made by Chandler et al (1992) that the Holistic Wellness Model's integration of spirituality is in the context of the whole individual rather than one who possesses spirituality as a separate component.

A study of the research literature identifies specific variables that appear to define and differentiate spirituality from religion. Spirituality can be defined as intrinsically based beliefs in which personal values are used for guidance in day-to-day living (Mackey & Sparling, 2000). Using Viktor Frankl's theoretical basis for spirituality, O'Neil and Kenny (1998) describe an individual's spirituality as the core of one's existence. In addition, the authors identify spirituality as contributing to an individual's interpersonal connectedness and purpose in life. Other variables associated with spirituality include coping, a sense of inner strength, a belief in a higher power and the importance of spirituality as a contributing factor in health maintenance and well-being.

***Religion and Spirituality***

Religion and spirituality are most often used interchangeably. There is a fusion of terminology that binds the two together and succeeds only partially in discriminating a difference. William James (as cited in Miller & Thoresen, 2003) expressed religion as less an institutional phenomenon and more spiritually centered, relating religion to feelings, actions and experiences of individual men in their solitude and as in relation to what is considered divine. William James (as cited in Hill & Pargament, 2003) distinguished a firsthand experiential religion which is more synonymous with spiritual characteristics and secondhand experiential religion signifying the traditional, institutional concept. According to the authors, James recognized both beliefs beneath a

peripheral field of religion. George, Larson, Koenig, and McCullough (2000) agree stating that the two concepts are often intertwined citing distinguishable similarities evident between religion and spirituality.

Adams, Bezner, Drabbs, Zambarano, and Steinhardt (2000) note that there is a relationship between religion and spirituality, but the two are not synonymous and add that spirituality can contribute to religious practices whereas religion can deepen spirituality. Using Koenig (2001), Hill and Paragament (2003) state that, particularly in the United States, a polarization of religiousness and spirituality is prevailing, whereas religiousness represents "an institutional, formal, outward, doctrinal, authoritarian, inhibiting expression and the latter represents an individual, subjective, emotional, inward, unsystematic, freeing expression" (pg. 64). The authors warn that the polarization of the two constructs could produce (1) a failure to recognize that spiritual expression often manifest itself through a social environment and ultimately religious traditions are interested in the individual's personal spiritual awakening, (2) a simplistic perspective of spirituality and religion causing one to be viewed as good and the other as bad, (3) a failure to recognize that most people equate spirituality as part of the organized religious experience regardless and seldom distinguish between the two, and finally (4) duplicative concepts and measurements.

The majority of the literature reviewed concurs with Tuck, Wallace, and Pullen (2001), in terms of operationalization and measurement, researchers have not been able to agree on a universal definition of spirituality. Much of the research that addresses spirituality and the health effects thereof actually examines only religion. Spirituality, when examined separately from religion has had little scientific inquiry (George et al,

2000). If the objective was to report on spirituality without the inclusion of religiosity, research appears to have failed.

Slater et al (2001) agree with Tuck et al (2001) that there is a level of difficulty in the defining nature of religion and spirituality, but proceed to differentiate the two, signifying spirituality as a 'post-modern offspring' to religion. To the extent that postmodernism, explains Buchanan (2000), means only one answer, one method to arrive at truth and all truths will be compatible with one another when uncovered. Meyer (2000) states that religion is not synonymous with spirituality but recognizes religious practices as a way to express spirituality. Makros and McCabe (2003) found that differences in spirituality and religion separated the two, recognizing that while they are not fully independent, they are, nonetheless, distinguishable. The authors conclude that there is an importance in considering spirituality and religion as separate constructs.

Citing that the measurement of spirituality and religion has improved in recent years, Slater et al (2001) identified several new measures chosen because of "promising theoretical and psychometric properties" (pg. 5). The four measures reviewed by the authors included the "Faith Maturity Scale (FMS; Benson, Donahue & Erickson, 1993); the Spiritual Assessment Inventory (SAI; Hall & Edwards, 1996), a revised version of the Spiritual Well-Being Scale (SWBS-R; Slater, 1999)…, the Religious Fundamentalism Scale (Altmeyer & Hunsberger, 1992) and the Spiritual Transcendence Scale (Piedmont, 2000)" (pg. 12).

***Spirituality and College Student Health***

Cavendish et al (2001) explain that young adults, in particular, are exploring spirituality and describe individuals, between the ages of 18 and 24, as operating with a

newly discovered abstract thought, questioning and drawing upon their own conclusions about worldviews whether answered by science, truth, myth, faith or logic and reason. Webber (2002) describes the young adult as actively pursuing a reason for existence and at times, the search for self is equated with a search for God. While the search for God is not always manifested through traditionalized religion, this does not mean young adults are not seeking spirituality. The author continues, stating that "…there is a hunger for meaning among young people…there is a desire for belonging and to find purpose in life" (pg. 42).

The significance of spirituality, as it relates to college students in young adulthood, contributes to overall health and well-being of the individual, especially when observed within multidimensional domains such as those represented in the Holistic Wellness Model. Payne et al (2004) explain that the college student is particularly susceptible to emotional vulnerability, thereby experiencing feelings that may lead to rejection and failure, reducing productivity and satisfaction. By young adulthood, college students are subjected to a diverse group of people and experience expanded roles related to employment opportunity and community involvement. When analyzing the health trends among college freshman, Sax (1997) discovered that the student's confidence in their perceived level of emotional health had dropped 10%, specifically 60.3% in 1985 to 53.2% in 1995.

In regard to the intellectual dimension, Payne et al (2004) state that "…the ability to process and act on information, clarify values and beliefs, and exercise decision-making capacity ranks among the most important aspects of total health" (pg. 19). The college student, as a young adult, wants the freedom to decide important decisions about

life for oneself, whereas the individual places relevance in decisions about morality, injustice, and dissension of the popular opinion of the majority (Cavendish et al, 2001). Finally, Payne et al (2004) conclude that whether a college student experiences spiritual health through the study of religious doctrine or, in the absence of a theist-based belief system, the spiritual dimension helps to open the student to experiences that involve nature or art. In turn, individuals participating in religious practices have lived healthier and longer lives.

Larson and Larson (2003) cite significant evidence whereas young adults who are more religious or spiritual tend to be less likely to experiment with alcohol, drugs, and tobacco. Of 14,000 youths surveyed, researchers found that the more religiously committed, the more young adults were less likely to experiment with drugs. In recent scholarly journals, negative reports on alcohol, tobacco and other drug use confirm the significance of studies such as Larson and Larson (2003) which report a positive correlation between a spiritual element and resistance to risky health behaviors confronting the college student. For instance, a study by Wechsler, Seibring, Liu and Ahl (2004) revealed that 81% of college administrators reported the use of alcohol by college students as a problem on campus, of which 15% considered it a major problem. Grace (1997) cites numerous studies that indicate heavy episodic or binge drinking exceeds 40% on college campuses. However, Sax (1997) reported the number of college freshmen drinking alcohol and partying, an activity associated with the social use of alcohol, declined from 1985 to 1995. Alcohol consumption is associated with 25% of all deaths of college students, half of all motor vehicle fatalities, “two thirds of violent behavior, one half physical injuries, one third of emotional difficulties, and one third of

academic problems…as well as unplanned and unsafe sexual activity, physical violence, sexual assault, unintentional and intentional injuries, and physical and cognitive impairment" (Grace, 1997, pg. 245).

A recent study by Lenz (2004) discovered that 32% of college students reported tobacco use during the past month. In addition, the author asserted several significant findings which included (1) students who had been diagnosed with depression were 7.5 times more likely to use tobacco and, according to Lenz (2004), this finding implied that the students responding to the survey possessed the propensity to self-medicate using tobacco as a stimulant in an attempt to alter their mood; (2) the findings were consistent with other studies which indicate there is an association between marijuana and alcohol use with the use of tobacco; and finally, (3) students who smoked were preceded by parents and friends who smoked.

In addition, a comparative study by Patterson, Lerman, Kaufmann, Neuner and Andrain-McGovern (2004) identified ethnic differences on college campuses contributed to tobacco use. White students were more likely to smoke than African American or Hispanic counterparts. Other findings in this particular study included students that lived in restrictive housing and participated in physical activity were less likely to smoke. In addition, psychological factors such as stress, mood and coping strategies were more likely heightened among students who smoked.

***Spirituality and Clinical Health***

Numerous studies suggest that spirituality and religion play an important role in health outcomes. Walter L. Larimore, M.D., an associate clinical professor of Family Medicine at the University of South Florida (2001), states that over 260 research studies

and 35 review articles reflect a positive association of faith with physical and mental health outcomes. Russell (1981) finds one's spirituality or 'spirit' is part of both wellness and of illness and can be used in the healing process to restore health. Longo and Peterson (2002) state, "…the separation of spiritual beliefs from the medical model was essential for the advancement of science and treatment of mental illness, it is now time for the return of spirituality as an adjunct to treatment" (pg. 338). In addition, as much as eighty-four percent of research studied indicated that a positive relationship between religious commitment and mental and physical health is present when a measure of religious commitment is included as part of the study (Anandarajah et al, 2001).

In 1989, at the annual meeting of the American Public Health Association, Dave Hilton, a consultant in international and congregation-based programs for Ecumenical Health Ministries in Atlanta, Georgia, expressed a need to examine healthcare beyond the biomedical concept. Calling on Christians to become healing communities, he urged exploration into four major elements of health which include justice, peace, integrity of creation, and spirituality. Expressing concern for the health crisis, Mr. Hilton stated that health comes from empowering individuals to become responsible for their own health and that church communities, armed with a health promoter in each congregation, can eliminate the health crisis. His belief that simply giving lectures to people or dispensing information is not enough to change negative health behaviors but that health behaviors are changed when people realize what they are doing to themselves. One way for individuals to understand what they are doing to themselves, is for communities to change their codes of behavior. He believes change has to be on a community scale.

In addition, when Dave Hilton was asked what a healing community looked like, he advised that many could learn from various organizations including Alcoholic Anonymous. He stated that the AA is not people gathering for an hour on Sunday but facilitate a process of sharing that reveals the individual's brokenness and failure and therefore, they heal.

Several studies substantiate a growing relationship between medicine and spirituality. One study reveals that "94 percent of patients admitted to hospitals believe that spiritual health is as important as physical health, 77 percent believe that physicians should consider their patients' spiritual needs as part of their medical care, and 37 percent want their physician to discuss their religious beliefs more" (Anandarajah & Hight, 2001, pg. 81).

Documented medical evidence is increasing, citing the benefits and positive health related outcomes as a result of religious and spiritual collaboration between physicians and their patients. At the University of Vermont, a study was conducted on 36 advanced cancer patients who, due to their religious affiliations, reported experiencing lower levels of pain (Ziegler, 1998). In another study pioneered by Dale Matthew and David Larson at the International Center for the Integration of Health and Spirituality (ICIHS), religious beliefs were positively correlated with diminished pain among 71 patients with cancer (Krebs, 2001). Of 232 elderly cardiovascular patients, lower mortality rates in the six month period following surgery was more evident than in patients lacking religious encounters (Krebs 2001).

Tracy A. Blankenheim (2001) cites a study researched at Duke University Medical School in which thirty-five individuals who had rheumatoid arthritis were

instructed to keep a diary for thirty consecutive days. The diary contained standardized measurements designed to assess religious and spiritual experiences and one's capacity to cope with pain. Upon examination of the diaries, researchers discovered that the participants of the study, who felt a desire to be closer to God, were touched by the beauty of nature or reported daily spiritual experiences controlled and decreased pain more readily.

Patients experiencing religious and spiritual interventions recovered faster from depression, had lower blood pressure, healthier immune systems, less stress related illnesses, improved coping skills, and less hospital admissions (Mitka, 1998). In the Journal of the Ambulatory Pediatric Association, Perrin, Barnes, Plotnikoff, Kenneth and Pendleton (2000) reiterate studies that show "spiritual/religious beliefs and practices may contribute to decreased stress and increased sense of well being, decreased depressive symptoms, enhanced immune system functioning, [and add other benefits such as] decreased substance abuse, faster recovery from hip replacements, improved recovery from myocardial infarction" (pg. 899).

In addition, research indicates that societal problems affecting the health of the individual are diminished and often times prevented entirely by exercising a plane of spiritual and/or religious intervention. In his book, *"Spirituality in Healthcare: Why, How, When, and What"*, Harold G. Koenig, M. D. (2002) summarizes several studies that suggest the impact of religiosity positively guide health behaviors that benefit society and the individual. Various studies indicate an inverse relationship between religion and the use of tobacco, alcohol, marijuana and other drugs, marital instability, permissive sexual encounters, and finally, teenage binge drinking and violence.

According to Ellis, Campbell, Detwiler-Breidenbach, and Hubbard (2002), "two studies of Midwestern family physicians found support for addressing patients' spiritual concerns [and another study of 12 family physicians] perceived that their spirituality enabled them to experience sacredness in patient encounters, to view medicine as a mission, to maintain centeredness, and to serve as instruments of healing" (pg. 250). Among two hundred ninety-six physicians surveyed in 1996 during a meeting of the American Academy of Family Physicians, 99% of the physicians were convinced that religious beliefs can heal and 75%of the physicians believed that the prayers of others could promote recovery for the patient (Sloan, Bagiella, & Powell, 1999).

Pellebon, and Anderson (1999) studied the impact of understanding the social work client from a spiritual-based perspective and how successful treatment strategies may benefit. The authors observed that there are life events which are experienced by clients with a spiritual worldview, whereas the first, being the socialization of the family having life events such as childbirth. Another life event proliferating a need for a spiritual approach includes issues such as adolescent sexuality and the potential for conflictive interaction between the adolescent and parents. And finally, the researchers looked at impact between adult attitudes and behaviors and spiritual realties.

Certain aspects of Pellebon and Anderson's (1999) study were particularly pertinent, in that, the clergy's role in aiding the social worker offered a better understanding in assessing spiritually-based clients. In two examples, the authors illustrate how the important utilization of the religious organization. In the first example, the local pastor was used as part of a system to integrate a former client back into the community. In a second example, a pastor was used to explain the normality of a client's

perceived abnormal behavior which had previously led to a premature diagnosis of schizophrenia. The authors conclude that the profession should approach the spiritual worldviews with some flexibility.

***Barriers and Limitations of Spirituality in the Health Arena***

Although, there is mounting evidence to suggest positive health outcomes from the inclusion of spirituality into promoting health, there remain common barriers and limitations to be considered. Ellis et al (2002) cite that healthcare providers lack the understanding of implementing spiritual health assessments, fear that they might invade the patient's privacy, concern themselves about the lack of time required to address spiritual issues; and finally, they address the inappropriateness of the clinical setting when talking to patients about spiritual issues. Koenig (2002) reiterates that healthcare providers lack the spiritual collaborative expertise needed for this type of intervention. For example, physicians can take spiritual histories or make spiritual assessments but their lack of theological knowledge limits their ability to adequately meet the spiritual needs of the patient. Furthermore, Koenig (2002) supports Ellis et al (2002) regarding the provider's lack of time as a barrier obstructing the clinical encounter. Koenig (2002) notes a study that was conducted in the latter part of the 1990's, in which 71% of 170 Missouri family physicians claimed time as being a barrier to addressing spiritual issues with their patients.

Another limitation is that spirituality may be too personal to address in a health setting and healthcare providers may negatively infringe upon personal beliefs that are not their own. Huber (2001) interprets Orr and Genesen as "invit[ing] the difficult situation of physicians telling patients that they (the patients) are wrong about their

religious beliefs." He further states "this is an inappropriate use of reduction according to religious theory…[which] ends up in a type of 'true for me' relativism that dissolves any hope of meaningful conversation in decision-making [for the patient]" (pgs. 1-2). Papenfuss (1991) defends the opportunity for the physician to become involved in addressing spiritual issues with the patient stating that while different people possess different spiritual beliefs, there are commonalities that are shared across belief systems that allow personal values to be discussed.

However, several other problems are present when including spirituality in scientific investigation. Specifically, Papenfuss (1991) addresses the limitations of science, in that, the lack of quantitative data in spirituality are mostly caused by researchers who are reluctant to study spiritual issues as fervently as the hard sciences have been studied. In addition, he cites Chapman (1986) warning not to restrict the field of health promotion by ignoring variables of the human condition in keeping with medicine's 'reductionist and mechanistic' point of view. Finally, he cautions against the tendency of researchers to avoid the study of spirituality merely because there is a lack of certainty in measuring this type of construct stating that, "behavioral sciences often must live with less certainty. The philosophical nature of spiritual health is not a good reason to avoid its study" (Papenfuss, 1991, pg.24). Thoresen and Miller (2003) agree that too often the assumption has been that spirituality cannot be studied scientifically therefore it has been neglected in research.

## Research and Literature Related in Methodology

This section focused on the literature relating to the methodology used in studies focusing on the relationship between spirituality and health. Ehman, Ott, Short, Ciampa

and Hanson-Flaschen (1999) developed a study which examined how physicians integrated questions concerning religiosity and spirituality into their medical histories given to their patients on initial visits to a pulmonary office practice at a university teaching hospital. The purpose of the study was to determine the patient acceptance of questions asking about the implementation of spiritual beliefs and religion in decisions regarding their health. The methodology used in the study included a 3-part self-administered questionnaire consisting of 18 items, one of which included the primary question, "Do you have spiritual or religious beliefs that would influence your medical decisions if you become gravely ill?" (p. 1803)

The assessment instrument was piloted for readability and comprehension using test-retest reliability. Thirty patients from the pulmonary office completed the questionnaire twice, 2 to 4 weeks apart. Upon satisfactory reliability determined by correlation coefficients exceeding .7 ($p<.001$), linear correlation and $\chi^2$ analyses, the questionnaire was administered after approval of the hospital IRB. The questionnaire was administered in February and March 1997 to 214 consecutive adult patients visiting the pulmonary practice. Patients were approached in the waiting room by a member of the pastoral care department, shown the questionnaire and ask if they would like to participate in the study. The questionnaires were completed anonymously and returned immediately upon completion. There were 189 patients asked to complete the questionnaire and all but 12, who were called to see the physician before completion, finished.

Analyses of the questionnaire, using Chi Square ($\chi^2$), yielded 77% of the population believing that there is "life after death"; 90% believed that prayer affected healing and recovery; and 45% agreed that they should be asked about spiritual or religious beliefs should they become ill. The study revealed that religiosity did not predict the patient's desire for inquiry into their spiritual or religious beliefs should there be a serious illness. However, most who reported religious beliefs want the physician to inquire in time of illness whereas those who did not possess such beliefs was undecided about the physician's inquiry about such issues (Ehman et al, 1999).

Pardini, Plante, Sherman and Stump (2000) conducted a study which addressed the value of religious faith and spirituality on individuals attempting to recover from substance abuse. The participants in the study consisted for 236 individuals reportedly recovering from alcoholism and/or drug addiction. The participants, 131 males, 102 females, and 3 unreported, were Catholic, Protestant, or Christian. The authors constructed two scale items which included a 10-point Likert scale item that measured a perceived level of spirituality and a 10-point Likert scale item to assess a perceived level of religious importance. In addition, six other scales were used which measured religious faith, situational optimism and pessimism, perceived social support, trait anxiety, resilience and the individual's propensity to answer a question favorably or defensibly.

Measures of central tendency were used to provide descriptive statistics for the study variables. Pearson correlations were calculated between psychological variables including optimism, social support, hardiness to stress and trait anxiety and findings produced positive correlations except for trait anxiety which measured negatively. The two items measuring spirituality and religiousness were found to be significant.

Hierarchical multiple regressions were used to determine how well religious faith and spirituality predicted the psychological variables represented in the study. Social desirability controlled for its effects on the dependent measures. Findings included religious faith as significant in predicting optimism and social support. However, when spirituality was entered in the final step, the proportion of explained variance increased significantly and religiousness disappeared. Finally, multiple regression analysis was used to predict whether or not religious faith was a significant predictor of trait anxiety, but spirituality, rather than religious faith, was found to be more significant in increasing explained variance.

Findings substantiated in the study included overall, individuals recovering from substance abuse associated more with spirituality rather than religiousness. In addition, the study suggested that spirituality and religiousness may be associated with positive mental health outcomes. Specifically, all psychological variables measured in the study, i.e. coping, resilience to stress, optimism, social support and anxiety correlated positively with religious faith and spirituality.

Brown, Parks, Zimmerman, and Phillips (2001) addressed the growing concern for alcohol and drug abuse in adolescents. The purpose of their study was to address the relationship between religion and racial differences in the adolescent use of alcohol. Noting the increasing problems associated with alcohol and drug abuse, Brown et al stated that the role of alcohol and drug abuse perpetuates both "physical and psychological health problems, crime and the spread of infectious diseases" and other problems such as "adolescent suicide, automobile accidents and drownings…[are] well

established" (p. 696). In addition, based upon extensive literature research, Brown et al found evidence consistently showing racial differences in alcohol use among adolescents.

To determine whether or not a relationship exist between religion and racial differences in the consumption of alcohol by adolescents, Brown et al extracted data from the first wave of a 3-year longitudinal study. The data involved the implementation of interventions that aimed at reducing alcohol use and sexual risk-taking behavior among adolescents in schools in northern Ohio and Kentucky. Of the twenty-five high schools in Ohio and Kentucky who were ask to participate in the study, eight declined citing that the content material may be too explicit to acquire consensual acceptance from the various communities. Parental consent and student assent was necessary for participant inclusion in the study. Students were followed from the ninth grade through the tenth and eleventh grades. The primary data collection was obtained from self administered comprehensive surveys from the first wave of the study and religion was addressed during the second wave.

The current study consisted of 899 white and black ninth-grade students, primarily consisting of 14 and 15 year old adolescents, who had initially been included in the first and second wave of the longitudinal study (n=2,961) and all information for the variables of interest were available. Demographics were acquired and measures were used to ascertain the level of the participant's alcohol use, if any. In addition, participants responded to a 4-point Likert scale in response to questions concerning problem drinking. Finally, questions were asked about the participant's involvement with religion. Inquiries included whether or not students attended church, how often did they pray, how

important was religion in their life and how did the student's feel about the Bible (Koran or other holy book).

A descriptive analysis revealed that most participants (92%) considered religion an important component in their lives. $T$-tests compared black and white students which revealed a significant difference in their perception of the importance of religion. Brown et al found that the African American students placed more importance on religion; black adolescents prayed more often, attended church more often and black adolescents were described more as fundamentalist in their religious beliefs. The majority of the adolescents reported alcohol use but less reported alcohol as being consumed recently. Black adolescents reported drinking less than white adolescents. In addition, 24% white adolescents versus 12% black adolescents reported drinking for the purpose of getting drunk.

Bivariate correlations described associations between alcohol use, problem drinking and religiosity variables. Fundamentalism was associated with black adolescents and fundamentalism and frequency in which participants attended religious services were associated with white adolescents. In addition, multiple regression analysis was used to identify prediction models for black and white adolescents. Findings included religion interacting with gender for both races. In predicting problem drinking, how often one prayed was more significant for black adolescents and the importance of religion was more predictive of white adolescents. Conclusively, racial and gender differences were significant variables for findings in this study and they should be considered when initiating substance use interventions.

Miller and Gur (2002) investigated the question, "Does the association between depression and each respective dimension of religioisity (personal devotion, personal conservatism, institutional conservatism and, frequent participation in religious community) differ by physical maturation status in adolescent girls?" (pg. 207). The methodology used in the study included a participative sample of 3,356 adolescent girls, averaging 16 years of age, from the North Carolina Adolescent Health Survey (AD-Health). The North Carolina Adolescent Health Survey is a school-based study which examined health-related behaviors of adolescents in grades 7 through 12. The schools were selected based on several criteria based on region, urbanity, type of school and racial composition. This is a national representative sample of adolescents attending school.

Maturation status was gathered by assessing self-reported three sets of secondary sexual characteristics which included (1) age of onset of menstruation, (2) information on breast size, and (3) level of body curviness. Depressive symptoms were measured by using a 19-item scale. Religiosity was measured using self-report on seven questions. The sample was stratified based on these three criteria. Measurement of the data was performed using *t*-tests for continuous data and $\chi^2$ for categorical data. Logistic regression was used with depression as the outcome variable.

Findings of the study included an association between religiosity and depression in physically mature female adolescents. Personal conservatism and institutional conservatism were inversely associated (17% to 24%) with depression in non-highly mature girls whereas depression was associated with highly-mature girls. However, personal devotion and religious community participation was found to be associated with

decreased risk for depression more so in highly mature girls (19% to 26%) versus non-highly mature girls (32% to 43%).

Icard, Bourjolly, and Siddiqui (2003) orchestrated a study to explore a variety of ways that could be utilized to link African Americans with health promotion programs. Research indicates that African Americans are at high risk for severe health problems. Unable to access healthcare as frequently as white people, various channels in which African Americans can gain access is becoming of interest and importance. With the prospect of designing strategies that may enable African Americans greater access to healthcare, focus groups were initiated to gather information for this purpose.

The methodology used by the authors constructed focus groups which consisted of 26 African Americans, male and female. Criteria requested for selection were that the African Americans have a low income and possess low levels of education. The participants were contacted and given a telephone number to call should they be interested in participating in a focus group. Those that evidently were selected and who participated in the focus groups discussed information structured by the authors of the study. The facilitators of the focus groups presented several questions ranging from such topics as who should disseminate information into the African American community about health promotion programs to what were some of the best methods to reach members of the community. The recorded data collected in the focus groups was then transcribed and analyzed. A qualitative content analysis was used to identify key words and phrases placing emphasis on attitudes and beliefs about African American involvement in health promotion programs.

Analysis of the focus group discussions showed that the person who delivered information to motivate African Americans should be well known and respected among the African American community. However, the focus groups cautioned against the individual having too much notoriety whereas their appearance in the community attracted complacency by those that knew them. In addition, the focus groups stressed that the individual's credibility in the community should not be substituted as professional credentialing. Some characteristics of the message delineated to inform and educate the African American community about health promotion programs should be straight forward, concerning, in a language familiar to the targeted area, positive, and empowering.

Because the African American church has always been a viable venue for responding to the needs of African Americans, one significant aspect of the study signified caution in using the church as a channel for health promotion programs citing that some may view this as counterproductive. Some in the focus groups indicated that the certain segments of the population at risks for serious health problems may be less inclined to participate in outreach health programs initiated by the church. The authors concluded that while the African American church provides a great resource for some, others may view it with suspicion.

## Research and Literature Related in Content and Methodology

This section emphasized the content and methodology, specifically addressing the relationship between spirituality and the health of college students in a university setting. The methodology and instrumentation is investigated as closely as possible as it refers to the relationship between spirituality and health. In the content section, the integration of

spirituality into health delivery appears to have a significant impact on positive health outcomes. Likewise, investigation into other venues offering a scientific observation into the relationship between spirituality and health is increasingly citing justifiable associations between the pair.

In 1994, Frankel & Hewitt orchestrated a study examining the relationship between religion and health among Canadian university students. Some students were involved in religious groups on campus while other students were not affiliated with campus religious groups. An important contribution by the literature in this study revealed that *extrinsic* dimensions of religiosity prove less frequently as predictors for health, however the authors found that *intrinsic* dimensions of religiosity are reported showing a positive relationship. Extrinsic dimensions are associated more with traditional religious practices, e.g. church attendance whereas intrinsic dimension are associated more with spiritual concepts, e.g. commitment. The authors hypothesized that students who were involved with faith groups on campus would report better mental and physical health than those students who were not involved with campus faith groups.

A sample of 299 students was drawn from a population of 26,000 students at the University of Western Ontario located in London, Canada. The first group, or the group affiliated with campus faith groups totaled (N=172) and second group, enrolled in first and second-year sociology classes totaled (N=127). Data was collected, with no prior announcements, to ensure that typical group members were present. The research instrument was designed specifically for this study. The questionnaire was pre-tested with student volunteers who were not part of the study.

Comparisons were made between groups in respect to demographical information and no significant differences were found between the affiliated and non-affiliated groups. However, the groups did report significantly different income levels. Those students in the non-affiliated group reported higher income levels. According to the information provided by the principal investigators, both groups were similar. Examining other group differences, specifically in beliefs and values, investigators found that the affiliated group valued relationships with others ($t=6.76$; $p<.001$) whereas the non-affiliated group focused more on material possessions and personal success ($t=8.69$; $p<.001$). In regard to groups differences in health, the affiliated group was healthier and utilized healthcare services less than the non-affiliated group ($t=2.65$; $p<.01$). Other group comparisons revealed that the affiliated group was happier ($t=3.27$; $p<.001$), ($t=4.10$; $p<.001$) and more satisfied with their life ($t=4.39$; $p<.001$). Also, two traits, mastery and self-esteem were measured and Frankel and Hewitt found no differences between the two groups. Overall, the investigators in this study found that the affiliated students were more satisfied with their lives than their non-affiliated counterparts. In addition, stress was measured and students in the affiliated group reported significantly fewer stress events ($t=2.60$; $p<.01$). The authors stated that although the affiliated group appeared happier and less stressed, causal direction was not addressed therefore, the affiliated group members could have possessed these qualities prior to coming to the campus faith group.

Kolchakian and Sears (1999) examined religious coping in college students to determine the effects of religious coping on psychological and physical symptoms. Research of the literature discovered that stress can be buffered reducing symptoms

resulting from stress related life events. Furthermore, research literature indicates that religious coping is a preferred venue among adults for dealing with stress.

The participants in the study were 140 undergraduate psychology students. The methodology used in the study consisted of the college students, on a volunteer basis, completing several instruments in designated one-hour testing sessions. The instruments were used to test variables including religious coping, religious motivation, anxiety, depression, optimism, stress, perceived stress, social support and health. All, of which, were determined by the researchers to be contributors in the religious coping profiles of college students.

The results of the study were determined by the researcher's use of correlations, cluster analyses, and analyses of covariance (ANCOVA). Independent variables included stress moderators and major life events and dependent variables included anxiety, depression and health. Correlational coefficients were computed to assess the relationship between the independent and dependent variables. Correlations for life stressors, depression and anxiety were significant. Perceived stress was positively related to the variables as well. Cluster analyses were utilized to determine if there were similar religious coping profiles among the college student sample. Finally, the ANCOVA was used to determine whether the cluster groups differed in anxiety, depression or health. In regard to anxiety, depression or health, there were no significant main effects or interactions.

According to Kolchakian and Sears (1999), findings of the study concluded that the health promoting effects of religious coping were not discovered among college students. The null findings of the study indicate that the positive benefits derived from

religious coping may come only during extreme cases of severe life stress. Additionally, college students may seek relief from life stressors through familial and social encounters rather than religious coping. Other stress moderators and their importance in predicting future mental and physical health outcomes were examined. Measures of stress and social support showed significant predictability of mental and physical health.

Another study evaluated the possible relationship between the spiritual and psychological dimensions and to an overall model of perceived wellness. Adams et al (2000) hypothesized a positive relationship existed between perceived wellness and life purpose, optimism, and sense of coherence. In addition, the authors investigated the effect of life purpose on perceived wellness as mediated by optimism and sense of coherence.

A convenience sample of 112 undergraduate students enrolled in a health education class at the University of Texas participated in the study. Participation rate was 96%. Four scales were used in the study including the Life Attitude Profile, Life Orientation Test, Sense of Coherence Scale and the Perceived Wellness Survey. To determine if a positive relationship between perceived wellness and life purpose, optimism and sense of coherence existed, Pearson product-moment correlation coefficients were correlated. To determine the effect of life purpose on perceived wellness as mediated by optimism and sense of coherence, path analysis was implemented. To examine a goodness of fit of the two models, chi-square, the normed-fir index, the comparative-fit index and the Tucker-Lewis index was used.

Higher scores on perceived wellness significantly related to the higher scores of life purpose, optimism and sense of coherence supported a positive relationship between

perceived wellness and life purpose, optimism and sense of coherence. The path analysis supported the proposed model that life purpose leads to optimism and a sense of coherence thereby a perceived level of wellness. A non-significant chi-square value, $\chi 2$ (1, N=112) =2.22, p =.136 indicated that the model fit the data well. The authors reported that the results of this study added insight into the relationship between spiritual and psychological dimensions of wellness in a college student population.

Trockel, Barnes, and Egget (2000) initiated a study which looked at how health behaviors affected grade point averages of students who lived on campus at a large private university. Because good college academic performance is an accepted indicator of career success, Trockel et al cited how health behaviors as well as other indicators such as physical, emotional, social, and spiritual health could possess the potential to affect academic performance. The participants in the study were 200 first year college students, living in dormitories on campus, who were randomly chosen from a list of students provided by the university. For participation in the study, students were given the opportunity to win a cash prize lottery. The university IRB approved the study. Upon development of the questionnaire which was based on "health behavior variables that [were] potential predictors of academic performance". The instrument was tested for reliability and content validity, revised and used for the study (pg. 126).

The survey, cover letter, and consent form was mailed to 200 randomly selected students living in on campus dormitories. If students did not respond, they were sent a notice in three days, a duplicate survey was sent in six days, and finally, a notice to expect an investigator to call for the purpose of surveying the instrument by telephone.

Written consent was not obtained from telephone participants. There was an overall response rate of 92.5%.

A Spearman's correlation analysis revealed a significant relationship between studying spiritually oriented material (r=.238; p=.001) and higher 1st year GPA's. Other significant variables included eating breakfast (r-.241; p=.001), using a planner (r=.224;.002), age(r=.169;p=.023), and female gender (r=.169;p=.046). Those variables associated with lower GPA's included later weekday wakeup, later weekend wakeup times, later weekday and weekend bedtimes, greater number of hours of sleep on weekend nights and hours worked per week. Independent variables were determined by stepwise regression analysis contributing to 23% of total variance in GPA's (p. 128). Although sleep habits exhibited the most significant finding in the study, regular study of religious material was cited as significant. However, Trockel et al surmise that "this could reflect the presence of study habits in general, rather than spiritual well-being or religiosity" (pg. 130).

A study conducted by Hestick, Perrino, Rhodes, and Sydnor (2001) surveyed 614 African American college students at a university in Maryland citing that smoking among African American youths is prevalent and death rates attributed to smoking among this population is higher. The purpose of the study was to determine the extent of cigarette smoking, to identify risk factors and to develop models to predict smoking. The participants included undergraduate students who were recruited from twelve psychology classes. The students were offered extra credit for their participation. After a brief introduction describing the purpose of the survey, the survey was administered to 614 students. A modified version of an 89-item questionnaire from a previous study was

issued to the students. Modifications to the questionnaire included eight additional questions assessing parent's smoking behaviors. The additional information was drawn from a single categorical indicator to measure smoking behaviors of parents, peers and students, a lifetime smoking category, and a single item measuring the importance of spirituality.

The statistical data analyses were conducted using SPSS (7.5 version). Chi-square was implemented to "compare the prevalence of trial smoking and lifetime smoking with sociodemographic and psychosocial characteristics". The results from this analysis were implemented in the logistic regression. Collinerarity using intraclass cluster correlation was explored. For smoking prevalence, smoking levels were attributed to the student's parents and friends who smoked throughout the student's early years, those friends who currently smoke and the student's level of spirituality. All these factors were found to be significant as strong predictors for lifetime smoking, such that smoking risk decreased when the participant's peers or family members were non-smokers and a value was placed on spirituality.

A study by Hawks, Madanat, Merrill, Goudy and Miyagawa (2002) examined the comparison of healthy lifestyle behaviors of college students from two diverse cultures. The participants for the research included a convenience sample of 1,233 college students, of which analysis was based on 594 from two academic institutions, namely Brigham Young University and Utah State University located in the United States and 629 respondents who resided in Japan. Almost 100% of the Brigham Young University students and nearly half of the Utah State University students were Mormons, therefore a large number of the sample were religiously affiliated and possessed a spiritual

orientation exclusive from other institutions. Another 337 participants located in northern Japan were included in the study for pilot testing of the Health Promoting Lifestyle Profile (HPLP) to ensure its reliability and validity among the Japanese respondents.

The HPLP, which assesses the relationship between several lifestyle behaviors and health status, was used in the study. Six subscales are represented in the HPLP which include health responsibility, spiritual growth, physical activity, nutrition, interpersonal support and stress management. Examples of other lifestyle behaviors addressed in the study included weight loss, eating disorders and exercise.

In order to determine the differences between US and Japanese responses to the latter lifestyle behaviors addressed in the study, the chi-square test was used. Differences in the mean level of agreement to subscale questions were found using the t-test. According to Hawks et al (2002), the normality assumption was satisfied for the instrument using the Kolmogorov-Smirnov test. The F statistic was used to assess equality of variances.

Results of the study indicated that men in the United States in comparison with Japan were less likely to diet to lose weight but was more likely to exercise on a daily basis. Women in the United States were more likely to diet to lose weight and exercise on a daily basis versus their counterparts in Japan. In comparing genders, women were more likely than men to address issues regarding weight in US and Japan. The HPLP subscales were analyzed and significant findings included that the Japanese put a higher value on health responsibility, the US respondents placed less emphasis on nutritional issues, American men and women scored higher on the exercise subscale and were more

likely to use exercise to enhance appearance and finally, American students placed a higher emphasis on spiritual growth. However, this conclusion was questioned due to the American sample attending a private, religious institution. The authors questioned the possibility of higher scores on spiritual growth being attributed to the 'spiritual awakening' evidenced in the New Age culture and the interest in complimentary and alternative therapies of the Native American and Eastern cultures.

McGee, Nagel and Moore (2003) studied whether college students in a southwestern university were influenced by spirituality. In addition, the study was to determine whether spiritual health could be increased in an educational intervention. A review of the literature revealed that a connection between spirituality and health existed. Using Schafer (1997), McGee et al (2003) found that college students, who had direction and meaning in their lives, had less personal distress. Using Seaward (1994, 1997), the authors identify four internal processes that support spiritual health. The four processes include centering, grounding, emptying and connecting.

The methodology utilized in the study was a quasi-experimental design using pre and post test. College students would test prior to receiving a spiritual health educational intervention. Those who exhibited higher scores on the Spirituality Assessment Scale (SAS) were to serve as indicators for the success of the study. The participants for the study included 167 students in four undergraduate courses at a large southwestern university. There were three study groups labeled as (1) the Treatment Group, (2) Comparison Group I, and (3) Comparison Group II. The differences between groups were the following: (1) the Treatment Group was enrolled in a Stress Management course with a spiritual component, (2) Comparison Group I students were enrolled in a Stress

Management course without a spiritual component added, and (3) Comparison Group II consisted of students enrolled in two Family Studies courses.

Results of the study were extracted from 230 usable pre- and post- tests questionnaires for data analysis. The final sample included 115 students. The data were processed using SPSS, a statistical software package. Descriptive procedures were analyzed, analysis of variance (ANOVA), and Tukey's post hoc test were also used. To determine statistical differences between groups prior to the intervention, a one-way analysis of variance on the pre-test was examined. Using the SAS scale, the mean scores fell just below the cut-off (140-160) for the category of "strong, positive spirituality", finding that pre-test scores among the three groups were insignificant (p. 588). At post-intervention, a one-way ANOVA procedure revealed a significant difference between groups $F(2, 112) = 4.997$, $p<.05$. The results from Tukey's Post Hoc test revealed that post-test scoring from the Treatment Group were significantly higher ($p<.05$) than scores from the comparison groups.

Results of the study found that students at a southwestern university who received an educational intervention on spiritual issues during a sixteen week period had significantly higher levels of spiritual health than their counterparts who did not receive the intervention. McGee et al (2003) noted two critical outcomes of this study which included first, that spiritual health can be incorporated into a classroom curriculum and secondly, spiritual health can be enhanced because of the intervention. The recommend that because spiritual health integrates positively with other health dimensions, its should become a integral part of therapy and treatment in various health intervention programs

The purpose of a study by Micheal K. Herndon (2003) was to explore what role spirituality plays in the lives of African American males. Specifically, the study examined whether or not spirituality affected the male African American's ability to stay in school. Research of the literature indicates that African Americans embrace spiritual values differently than European Americans. The author states that African Americans use spirituality as a coping mechanism for stress.

Having psychological and emotional support is an important factor for African American males at predominantly white universities. Other forms of support mentioned in the study include academic, social and financial. Utilizing these supports systems alleviates stress for the individual, however practicing one's spirituality is beneficial for African Americans attending a large university.

The methodology and instrumentation used for the study consisted of two sample selections, whereas the researcher chose African American males enrolled in a predominantly white institution (PWI) and invited them to participate. The researcher interviewed the participants first to collect demographic information and then to gather data for the research in question. The sample consisted of thirteen African American male students ranging between the ages of 19 and 26 years of age.

The researcher asked seven experts to examine the interview procedure to confirm whether or not the researcher was posing questions relevant to the research. In addition, at the end of the interview, the researcher summarized the key points that were made by the participant. Secondly, the researcher presented the interview to the participant for review and editing, thereby assuring that the opinions of the participant were stated

accurately. In turn, this process contributed to the credibility and objectivity of the collection, reporting and analyzing of the data.

Analysis of the data occurred by using the grounded theory method, a qualitative research technique which allows for data collection and analysis to occur at the same time. Open and axial coding was used to analyze the data, whereas open coding examined and dissected the collected data and axial coding sorted the information into themes as they emerged. Findings of the study included the emergence of three general themes including "(1) spirituality bolsters resilience; (2) spirituality provides a sense of purpose; and (3) spiritual support is provided by African-American religious institutions" (pg. 79).

One conclusion from the study was that faith and spiritual support from families contribute to college success for the African-American male. In addition, another conclusion from the study implied that the participant's level of spirituality fosters "intestinal fortitude" or persistence and resilience, interpreted as an internal locus of control and guiding force for the African American male. Such characteristics, in turn, suggest the likelihood for physical and mental fortitude and sustainability in an unfamiliar environment.

## Introduction to the Assessment Instruments Used in the Current Study

### *Measuring Spirituality*

A barrier inhibiting the study of the relationship between health and spirituality includes the lack of adequate and valid measurements that can advance the science of the discipline. According to Idler et al (2003), the advancement of the study of the relationship between spirituality and health has been hindered by the lack of adequate

measures and notes the inconsistencies often found in the findings in this field. Many instruments are being developed. Selecting appropriate instruments that attempt to measure constructs, such as spirituality, is a daunting task. Especially, when such constructs appear ultimately incapable of being defined.

MacDonald, Kuentzel, & Friedman (1999) attempted to identify and explain psychometrically sound instruments that may contribute to measuring spiritual constructs. One example identified by the authors included the *Expressions of Spirituality Inventory (ESI)* which has been used to investigate the relationship between spirituality and different areas of psychological functioning. MacDonald et al (1999) states that the instrument needs further psychometric work. The instrument is described as "representing a significant advancement in the scientific assessment of spirituality" (pg. 157).

Another instrument discussed by MacDonald et al (1999) is the *Mental, Physical, and Spiritual Well-Being Scale (MPS)* by Villa-Brodrick and Allen (1995). The most interesting component contributing to the usability of this measurement is the attempt to produce an instrument described as "a holistically oriented tool for assessing the well-being of body, mind and spirit" (pg. 162). The instrument has advanced through several validation techniques including item revision and clarification, factor analyses, comparison studies with similar scales, test-retest reliability and components of construct validity. According to the authors, the MPS appears promising as a holistic measure of well-being but, again needs further validation.

A publication by the John E. Fetzer Institute namely, the *Multidimensional Measurement of Religiousness/Spirituality for Use in Health Research: A Report of the*

*Fetzer Institute/National Institute on Aging Working Group,* gives an excellent overview of measurement instrumentation focusing on religious and spiritual domains and their relevance to health. The measurements discussed in this publication focus on various constructs ranging from coping to religious intensity and are excellent resources. A review of the instruments found a description of the construct, previous psychometric work, association with health, suggested administration of the instrument and long and short form of the proposed items (Multidimensional Measurement of Religiousness/Spirituality, 2003).

***Spirituality Scale (SS)***

During the fall of 2003, at The University of Tennessee, Knoxville, to fulfill the academic requirements for a class entitled, *Seminar in Applied Psychometrics* facilitated by John Lounsbury, Ph.D., Linda Nelms, MPH implemented a study to develop and establish the reliability and construct validity of an instrument to measure spirituality. The completed scale was entitled, the Spirituality Scale (*SS*).

The instrument, a summated ratings scale, was designed to measure the construct, spirituality. While the primary reason for constructing the SS was to fulfill the current research objectives, another purpose targeted the creation of a psychometrically sound instrument that would produce reliable and valid information to be used in a variety of settings including but, not exclusively, to medical, educational, religious and business venues. In addition, the process of measurement, as a whole, is encouraged to be kept short and broad constructs can typically be measured by twelve to fourteen items (Lounsbury, 2003, Classroom Notes). Therefore, brevity was an important factor

considered during the construction of the SS. According to Idler et al (2003), time limitations are often encountered when addressing psychosocial factors in health surveys.

Initially, the investigator constructed twenty items which fell within the recommended eighteen (50%) to twenty-four (100%) item range needed for an eventual twelve item scale. Dr. Lounsbury reviewed and deemed the items to be "consequences or correlates of spirituality rather than spirituality itself". A second submission consisted of twenty-five newly constructed items which were reviewed by Dr. Lounsbury whereas, fourteen items were found to be acceptable. A third and final submission was comprised of twenty-nine items which included the fourteen items from the second submission and fifteen additional newly constructed items. This final submission produced a twenty-seven item scale accepted by Dr. Lounsbury. In summation, a total of sixty items was generated to produce the eventual twelve item scale, exceeding the recommended 50% to 100% item requirement.

The initial twenty-seven item scale created by the investigator ask the college student participants to rate each item using the instrument's 5-point Likert scale response format where (1) Strongly Agree, (2) Agree, (3) Neutral, (4) Disagree, and (5) Strongly Disagree. Completion of the scale by the respondent is simple. The score denotes the participant's level of agreement or disagreement with each stated item. To score the scale, values are assigned to the respondent's choice for each item and are added together to get a final score. The premise behind the scoring is to obtain a total score summarizing the construct (Dignan, 1995). A copy of the twenty-seven scale items and the instructions given to participants are located in Appendix A. Prior to the distribution of

the initial scale, permission from Internal Review Board (IRB) at The University of Tennessee was sought and acquired. See Appendix B.

The participant sample (N=61) consisted of undergraduate college students enrolled in two health classes taught in the Health and Safety Programs in the College of Education, Health and Human Science at the University of Tennessee. This sample was chosen because of its availability. Demographical information on the participants was not gathered from this sample.

A reliability analysis using SPSS 11.5 for Windows was computed. Results for internal consistency reliability estimates yielded a coefficient alpha of .80 (α=.803). See Table 2. After examining the results of the reliability analysis, guided by the *Alpha If Deleted Column* in the Item Total Statistics, all but twelve items was deleted from the scale. See Table 3. Results for internal consistency reliability estimates yielded a coefficient alpha of .93 (α=.926) for the following twelve items remaining in the initial spirituality scale. See Table 4.

***Spirituality Scale (SS) and Construct Validity***

Upon establishing the reliability of the spirituality scale, construct validity was sought, i.e. the degree which the spirituality scale measured what it was intended to measure. Nunnally and Bernstein (2003) state "…internal consistency is *necessary* but not *sufficient* for construct validity" (p.90). According to Trochim (2001), reliability and validity are not distinct but form a continuum.

Four construct subscales (31 items) within four differing scale facets were chosen from the NEO-PI-R Form S to form a nomological network i.e., "a conceptualization of expected relationships" for the construct spirituality (Newman, Benz, Weis and McNeil,

**Table 2. Results of Internal Consistency Reliability Estimates of the 27-Item Spirituality Scale (*SS*)**

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
|---|---|---|
| .803 | .808 | 27 |

**Table 3. Twelve Items Extracted From 27-Item Spirituality Scale (*SS*)**

| Scale Items | Corrected Item-Total Correlations |
|---|---|
| 1. My spiritual beliefs help me to be a better person. | .716 |
| 2. My spirituality is at the core of who I am. | .843 |
| 3. My spirituality is my 'inner voice' speaking to me. | .592 |
| 4. I believe God, Creator or Higher Power is present in my life. | .605 |
| 5. My spiritual beliefs make my life more meaningful. | .752 |
| 6. I feel as if my life has a higher purpose. | .593 |
| 7. My spiritual beliefs positively impact my health and well-being. | .736 |
| 8. My spiritual beliefs guide my relationships with other people. | .725 |
| 9. I would feel lost without my spiritual beliefs directing my life. | .589 |
| 10. I am a very spiritual person. | .674 |
| 11. I try to be a spiritual person. | .501 |
| 12. My spirituality is my personal connection with God or a Higher Power. | .388 |

**Table 4. Results of Internal Consistency Reliability Estimates of the 12-Item Spirituality Scale (*SS*)**

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
|---|---|---|
| .926 | .926 | 12 |

1997, pg. 40). The NEO or "Big Five Inventory" was developed by Paul Costa and Robert McCrae and represents a significant number of research studies that rely heavily on factor analysis and rational scale construction. The most notable feature of the NEO instrument is its emphasis on personality being reduced to five basic factors. The NEO-PI-R Form S refers to a self report form (Lounsbury, 2003, Classroom Notes).

The four construct subscales chosen from the NEO instrument included (1) Anxiety, a subscale of the NEO measurement, Neuroticism, a dimension defined as assessing an individual's emotional instability and disorder; (2) Positive Emotions, a subscale of the NEO measurement, Extroversion, a dimension defined as measuring a person's propensity toward other people; (3) Feelings, a subscale of the NEO measurement, Openness, a dimension defined as a person's susceptibility to new experiences, learning and insights; and (4) Tender-Mindedness, a subscale of the NEO measurement, Agreeableness, a dimension measuring a person's inclination to offer aid and sympathize with others (Lounsbury, 2003, Classroom Notes). To further explain the nomological network, a diagram was constructed using Cronbach & Meehl (1955) view of construct validity (Trochim, 2001). See an illustration of the Nomological Network in Figure A-1 in Appendix C.

The basis for the use of the four constructs (1) anxiety, (2) positive emotions, (3) feelings and (4) tender-mindedness is rooted in the research literature. According to Pargament & Mahoney (2002), while God is "central to any understanding of spirituality", spirituality is more than God. Spirituality is sacred. People who seek spiritual sacredness are inclined to experience certain psychological and social benefits, whereas the authors use marital satisfaction, parental sanctification, perseverance and

"spiritually-related themes" such as love, hope, forgiveness, acceptance, and serenity as examples. In contrast, according to the authors, individuals are more susceptible to experience anxiety or depression, should spiritual sacredness become blocked or lost. In essence, the literature appeared to support the relationship between an individual's spiritual and positive constructs, i.e. positive emotions, feelings, and tender-mindedness and was less supportive of a spiritual relationship with negative constructs, i.e. anxiety.

Based on the results of the initial twelve item SS ($\alpha = .93$), the scale was revised by the researcher and integrated with the four constructs chosen from the NEO-PI-R Form S subscales. The forty-three item instrument contained twelve items from the initial scale measuring spirituality, eight items measuring anxiety, eight items measuring positive emotions, eight items measuring feelings and seven items measuring tender-mindedness.

The participants were asked to rate each item using the instrument's 5-point Likert scale response format where (1) Strongly Agree, (2) Agree, (3) Neutral, (4) Disagree, and (5) Strongly Disagree. The score denotes the participant's level of agreement or disagreement with each stated item. A copy of the forty-three scale items, recoding, and the instructions given to participants are located in Appendix D.

The participant sample (N=92) consisted of undergraduate students enrolled in three health classes taught in the Health and Safety Programs in the College of Education, Health and Human Science at the University of Tennessee. The three health classes were exclusive from the two health classes used to determine the reliability of the initial spirituality scale. Again, this sample was chosen because of its availability. Demographical information on the participants was not gathered from this sample.

A reliability analysis using SPSS 11.5 for Windows was computed for the revised spirituality scale items and the four constructs chosen from the NEO-PI-R Form S subscales. Some items in the NEO subscales were *reverse items*. The response values were reversed in the syntax recoding for each of these items. The internal consistency reliability estimates were determined by using Cronbach's Alpha (α) which yielded the following results. See Table 5.

As evidence of construct validity, the SS, which purports to measure spirituality, should show convergent and discriminant validity, subcategories of construct validity. Convergent validity was evidenced by the correlations within the construct, spirituality. The correlations between items in the SS were significant. The high-item intercorrelations for all item pairings ranged from $r$=.392; p<.01 to $r$=.701; p<.01. The correlations provide support that the items are related to the same construct. However, Trochim (2001) cautions that high-item intercorrelations, while related to the same construct, does not mean that the construct is that which is being measured, in this case, spirituality.

Discriminant validity was examined by looking at the cross-construct correlations, which ranged from Tender-mindedness (TEN) ($r$=.128) to Positive Emotions (POS) ($r$=.351). Although the Positive Emotions (POS) ($r$=.351) and Feelings (FEE) ($r$=.267) correlated with Spirituality (SPIRIT) slightly higher than the other two constructs, Anxiety (ANX) ($r$=.159) and Tender-mindedness (TEN) ($r$=.128), they were still lower than the convergent correlations. Because the four cross-construct correlations were low, this provides evidence that the measures are discriminated from the construct, spirituality. In other words, the SS is not measuring the same thing that the other constructs are

**Table 5. Results of Internal Consistency Reliability Estimates of the Spirituality Scale (SS) and the NEO Subscales**

| Scale | $\alpha$ = |
|---|---|
| Spirituality Scale (SS) | .944 |
| Anxiety | .770 |
| Positive Emotions | .623 |
| Feelings | .595 |
| Tender-Mindedness | .442 |

measuring. Therefore, because the SS supports convergent and discriminant validity, construct validity is supported.

While low correlations of cross constructs were sought to support discriminant validity, the results of this study provided some surprises, in that, the correlations between spirituality and feelings and tender-mindedness were much lower than expected. Due to the relative somewhat higher correlation between spirituality and positive emotions, there is an indication that these two constructs may be associated and less distinguishable. Discriminant validity is possible although moderate correlations exist between constructs (Lounsbury, 2003 Classroom Notes).

***The College Student Appraisal of Risks Survey (The CARS)***

The College Student Appraisal of Risks Survey (The CARS) is a version of The Healthier People Network health risk appraisal which assesses the risk factor values and mortality statistics of college students. Specifically, the instrument identifies healthy behaviors and health risks of the college student, thereby introducing choices that may enhance the student's health and prevent disease. Using Hutchens (1991), Neal (1992) explains that the health risk appraisal is "a method to describe a person's chances of death or illness within a defined period of time as compared to a group of persons of the same age and sex" (pg. 6).

According to Neal (1992), the health risk appraisal is a significant development in prospective medicine. One of the most significant contributions of the health risk appraisal is the insight that is acquired about the population with whom is being surveyed, therefore increasing knowledge and ability to plan health programs in accordance with identified needs. The author characterizes such instruments as "a

measure and a message", whereas health data is obtained and health behaviors can be evaluated by the individual (pg. 8). Using Dunton (1991), Neal (1992) cites commonalities between health risk appraisals which include (1) gathering of health information, (2) processing of the data, (3) comparison of a national mortality data base, (4) development of probabilities that an individual will die within a future period based upon the individual's "risk" age, then (5) the findings are concluded in a personal health profile which is returned to the individual with recommendations to improve the risk age.

Benefits to using health risk appraisals is that the surveys are easy use, inexpensive, popular with clients, systematically organizes preventive health information, provides group data summarizing health problems and risks and could aid health promotion initiatives in motivating healthy behavior. The health risk appraisal is not a diagnosis of illness, a medical history or a substitute for a medical exam. In addition, the health risk appraisal does not assess environmental or social risk factors (Haines, 2004).

## Chapter Summary

The Chapter II review of the literature revealed that the integration of spirituality into a biomedical culture documents a timely re-emergence of historical prominence and provides a channel for significant positive health outcomes and quality of life for the individual. According to the content section of the study, the primary task is to operationalize spirituality thereby permitting its inclusion into scientific inquiry. As extensive empirical investigations focus on spirituality and health, the prospective inclusion of spirituality into a holistic model, centering the construct among other dimensions of one's life, solidifies the significance of its existence.

Contributing to this study was the section of research related to the methodology implemented in prior studies to understand the relationship between spirituality and health. The information cited in the studies presented the researcher with several different and useful approaches when determining various methods for scientific study.

In the content and methodology section, the literature review produced few studies which utilized the college student population in determining a relationship between spirituality and health. The need for this research was further evidenced by the inadequate number of studies relating to spirituality and health in a university setting. In addition, the Spirituality Scale (SS) and The College Student Appraisal of Risks Survey (The CARS), the instruments used in this study were introduced.

# CHAPTER III
# METHODOLOGY

## Introduction

The purpose of this chapter was to investigate the relationship between a self-reported level of spirituality and the health and well-being of college students. The Holistic Wellness Model served as a theoretical framework for this research. Hettler's (2004) descriptive **c**haracteristics of the six dimensions of wellness provided a foundation explaining the relevance of the interrelation of the spiritual and personal components within the other multidimensional domains existing within an individual's life. Using The Holistic Wellness Model, Chandler et al (1992) predict that a level of optimum wellness exists when each of the five dimensions, i.e. occupational, social, emotional, intellectual and physical as described by Hettler (2004) possess "a balanced and developed potential in the spiritual [sixth dimension] and personal realm" (pg. 171).

The study addressed the research questions in Chapter I which examined whether or not spirituality was related to the health status of college students in a university setting. Specifically, the research questions addressed the following health related variables: current health, overall physical health, physical activity, life satisfaction, tobacco-related health risk behaviors and alcohol- related health risk behaviors. This chapter addressed the purpose of the study and the related research questions pertaining to the research design, derivation of research questions, study population, instrumentation, data collection and statistical analyses. Further validation of the Spirituality Scale (SS) as evidenced in Chapter 2 was implemented.

## Research Design

This study utilized a non-experimental research design driven by a lack of random assignment of the participants in the study and the absence of multiple groups or measurements. The non-experimental research design is commonly used and represents an acceptable design. However, the weakness of the non-experimental research design is in regard to internal validity whereas, this type of research design is not a good method for assessing causality (Trochim, 2001). Defining a causal relationship between spirituality and health status is not the focus of this study.

A convenience sample of college students in a university setting was used for the purposes of this study. Trochim (2001) indicates that using a convenience sample produces a threat of weak external validity for example, the generalizability of the study may be questioned. In addition, the sample may be biased by over-representing one primary segment of the university population, i.e. students enrolled in health classes.

The data gathered in this study were analyzed using various statistical methods described in the latter part of this chapter.

## Derivation of Research Questions

The problem for this study was whether or not college students, who may value spirituality as an integral component in their life, experience a positive health status. An extensive review of the literature revealed that there has been limited empirical investigation into the relationship of the health of college students and their perceived level of spirituality.

The purpose of this study was to investigate the relationship between a perceived level of spirituality and the health and well-being of college students. The Holistic

Wellness Model (Chandler et al, 1992) provided the theoretical framework used to help guide the study. Upon examination of the multidimensional components comprising the Holistic Wellness Model and to explore the relationship between spirituality and the health of college students, the following research questions were generated:

1. What is the relationship of a self-reported level of spirituality and the current health status of college students?
2. What is the relationship of a self-reported level of spirituality and the overall physical health of college students?
3. What is the relationship of a self-reported level of spirituality to the physical activity of college students?
4. What is the relationship of a self-reported level of spirituality to the life satisfaction of college students?
5. What is the relationship of a self-reported level of spirituality to the tobacco-related health risk behaviors of college students?
6. What is the relationship of a self-reported level of spirituality to the alcohol-related health risk behavior of college students?
7. Are there significant group differences between African American and White college students and a self-reported level of spirituality?

The research questions were derived from an extensive review of the literature that indicated that the college student's perceived level of spirituality was related to their health and wellness. The level of significance selected for the study was an alpha level, or p-value, of .05, whereas $p<.05$. According to Anderson and Finn (1996) setting the significance level "sets the standard for determining whether a particular sample mean

will be considered statistically significant or not" (pg. 396). Rubin and Babbie (2001) assert one of the primary reasons for choosing the significance level at this juncture of the study by stating that before the analysis of the data begins, it is important to select the significance level. Justification for doing so rests upon the integrity of the investigator meaning that the "selection of the significance level was biased by [a] priori knowledge of what each significance level would mean for the significance of [the] findings" (pg. 518).

A misconception of many researchers is that if a p-value of .05 is chosen, rather than a smaller p-value .01, for example, increases the chances of more highly significant findings. However, according to Newton and Rudestam (1999), "significance levels do not measure the strength of statistical association…[and] one cannot conclude that "findings are large or important based on the significance level" (pg. 88).

For the purposes of statistical testing, the investigator used two-tailed, or non-directional, tests of significance which implied that the research questions sought only to discover relationship between the stated variables and not that the predicted relationship was positive or negative. According to Rubin and Babbie (2001), "for any particular relationship that is found, regardless of whether it is positive or negative, two-tailed tests of significance add the probability of finding a relationship that is strong in the positive direction to that of finding one in the negative direction" (pg. 518).

## Study Population

The target population for this study was a convenience sample of college students chosen non-randomly in the Health and Safety Programs of the College of Education, Health and Human Sciences at The University of Tennessee. This population was chosen

due to its availability. To ensure anonymity, the identity of the participants in this study was unknown to the principal investigator. The participants were students (N=221) enrolled in six *Personal Health and Wellness* health courses during the 2004 fall semester. A copy of the Internal Review Board certification letter is provided in Appendix E.

## Instrumentation

The instruments used in the study included the Spirituality Scale (SS), a thirteen item scale that measures the construct, spirituality and The College Student Appraisal of Risks Survey (The CARS), a health risk appraisal that assesses health risk factor values and mortality statistics of college students. For ease of administration, the two instruments were combined and included in one folder for the purposes of this study. A standardized letter used by the instructors and both instruments, the SS and the health risk appraisal presented to the participants, are provided in Appendix F.

### *Spirituality Scale (SS)*

The Spirituality Scale (SS), a twelve item scale was originally developed in a previous study as explained in the section entitled *Introduction to the Assessment Instruments Used in the Current Study* in Chapter Two. Trochim (2001) reasons that most scales are developed as a part of exploratory research and primarily, the researcher is interested in knowing if a set of questions will be compatible with one another and if they measure the same construct. Additionally, the author states that the most common reason for the development of a scale is for scoring purposes. This final explanation offered by Trochim (2001) provided the primary purpose behind the development of the

SS. The goal was to create an instrument that could provide meaningful and useful results in measuring a subjective construct like spirituality.

Further justification offered by the principal investigator for the use of a new scale is the high degree of internal consistency and the construct validity demonstrated in the initial study. In the initial psychometric study of the SS, strong reliability and validity was evidenced whereas, internal consistency reliability estimates using Cronbach's alpha yielded a coefficient alpha of .94. Discriminant validity was examined by looking at the cross-construct correlations, which ranged from $r$=.128 to $r$=.351. Convergent validity was evidenced by the correlations within the construct, which ranged from $r$=.392; $p$<0.01 to $r$=.701; $p$<0.01.

Ratings for the instrument were given on a 5-point Likert scale response format. Upon establishing reliability and the validation of the original SS, the principal investigator discovered that one construct item had been inadvertently omitted namely, "My spiritual beliefs are the foundation for my religious background". Based upon the statistical findings in the results of the reliability analysis, guided by the *Alpha If Deleted Column* in the Item Total Statistics, the reliability of the scale would increase with the inclusion of this additional item. However, the inclusion of this item would make little difference since the construct, spirituality is what is actually being measured, not the scale. Lounsbury (2003) predicted that the correlation between the twelve item scale and the thirteen item scale would remain greater than .90 which would indicate both scales measured the same thing to the same degree. However, he recommended that the thirteenth item be included in future studies (Personal Communication).

Based upon the preceding findings, the thirteenth item was included in the SS. In addition, the order of the 5-point Likert scale responses were inverted and modified to reflect a parallel in the strength of response, i.e. *strongly agree* to the greater numerical order of five, *agree* to the greater numerical order of four, and so on. For the current study, a second component of the SS instrument was added for the purpose of obtaining demographical information that was not included on The CARS. See Table 6.

In the present study, a reliability analysis using SPSS 12.0 for Windows was computed and the internal consistency reliability estimates were determined by using Cronbach's Alpha (α) which yielded a coefficient alpha of .96 (α=.956), further evidence of the reliability of the SS instrument. See Table 7. The high-item inter-item correlations for all item pairings ranged from $r$=.32; p<.01 to $r$=.81; p<.01. See Table 8. The mean strength for the SS score assessed among the participants in the study was 3.97 (SD=.78), the median score was 4.08 and the mode was 5. Item mean responses for the SS are shown in Table 9.

***The College Student Appraisal of Risks Survey (The CARS)***

The CARS is a six-page, self-administered survey comprised of seventy-three health questions relating to baseline data which addresses the multidimensional components of the college student's health and elicits information about health risk factors that, once identified in an individualized health profile, may be reduced by the respondent. For the purposes of this study, only the first four pages of the self-administered survey comprised of forty-three health questions were addressed and completed by the respondents. In addition, not all the questions within the forty-three question framework were used in the study. Specific questions were chosen to reflect the

**Table 6. Demographical Questions Included on the Spirituality Scale (SS)**

| No. of Item | Demographical Questions |
|---|---|
| D1. | When attending classes, where do you live? |
| D2. | What class/academic level are you in now? |
| D3. | What is the level of education of your mother? |
| D4. | Which of the following best describes your current health status? |

**Table 7. Results of Internal Consistency Reliability Estimates for 13-Item Spirituality Scale (SS)**

| Cronbach's Alpha | N of Items |
|---|---|
| .956 | 13 |

**Table 8. Inter-Item Correlations in the Spirituality Scale (SS)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | | | | | | | | | | | | |
| 2 | .72 | 1 | | | | | | | | | | | |
| 3 | .49 | .65 | 1 | | | | | | | | | | |
| 4 | .57 | .62 | .32 | 1 | | | | | | | | | |
| 5 | .64 | .70 | .46 | .60 | 1 | | | | | | | | |
| 6 | .74 | .76 | .52 | .68 | .76 | 1 | | | | | | | |
| 7 | .53 | .56 | .45 | .60 | .58 | .69 | 1 | | | | | | |
| 8 | .63 | .71 | .53 | .57 | .60 | .65 | .57 | 1 | | | | | |
| 9 | .66 | .72 | .51 | .56 | .65 | .74 | .55 | .74 | 1 | | | | |
| 10 | .65 | .73 | .48 | .63 | .65 | .77 | .59 | .59 | .68 | 1 | | | |
| 11 | .70 | .81 | .56 | .61 | .67 | .73 | .61 | .73 | .72 | .72 | 1 | | |
| 12 | .55 | .64 | .52 | .57 | .48 | .63 | .58 | .63 | .57 | .60 | .69 | 1 | |
| 13 | .65 | .70 | .52 | .72 | .76 | .79 | .59 | .62 | .67 | .78 | .70 | .64 | 1 |

** Correlation is significant at the 0.01 level (2-tailed).

**Table 9. Mean responses for 13-item Spirituality Scale (SS)**

| Item Statistics | Mean | Std. Deviation | N |
|---|---|---|---|
| 1. My spiritual beliefs help me to be a better person. | 4.23 | .889 | 154 |
| 2. My spirituality is at the core of who I am. | 3.70 | 1.061 | 154 |
| 3. My spirituality is my inner voice speaking to me. | 3.58 | 1.058 | 154 |
| 4. I believe God, Creator or Higher Power is present in my life. | 4.59 | .653 | 154 |
| 5. My spiritual beliefs are the foundation for my religious background. | 4.14 | .984 | 154 |
| 6. My spiritual beliefs make my life more meaningful. | 4.12 | .945 | 154 |
| 7. I feel as if my life has a higher purpose. | 4.19 | .927 | 154 |
| 8. My spiritual beliefs positively impact my health and well-being. | 3.94 | .978 | 154 |
| 9. My spiritual beliefs guide my relationships with other people. | 3.88 | .970 | 154 |
| 10. I would feel lost without my spiritual beliefs directing my life. | 3.70 | 1.097 | 154 |
| 11. I am a very spiritual person. | 3.45 | 1.023 | 154 |
| 12. I try to be a spiritual person. | 3.93 | .856 | 154 |
| 13. My spirituality is my personal connection with God or a Higher Power. | 4.14 | .946 | 154 |

ideas presented in the research questions introduced in Chapter One and restated earlier in the current chapter.

Preliminary questions in The CARS include those inquiries concerning the individual's physical characteristics, such as height, weight, and body frame size of the individual. Other sections question respondents about chronic diseases, such as diabetes and unhealthy risk behaviors, such as smoking and alcohol use. Emotional health is addressed. In addition, gender specific health questions are addressed which gather data in regard to male and female reproductive health. Those sections of The CARS that were not completed by the respondents included thirty questions addressing high risk health behaviors, namely drug use, suicide, sexual behavior and violence.

Specific health information acquired using The CARS, in conjunction with the information derived from the SS, addressed three personal component dimensions, i.e. physical, emotional and social dimensions found within the Holistic Wellness Model. Two personal component dimensions, intellectual and occupation were not addressed.

## Variable List

To operationally define the variables used in the study, a variable list was constructed. The variables used in the analyses were derived from the SS and The CARS instruments. See Table 10.

## Data Collection

At the beginning of the 2004 fall semester, the principal investigator obtained the enrollment schedules for the *Personal Health and Wellness* classes. The enrollment schedules, complete with the names identifying students in each of the six health classes, were sent to Edwin Hutchens, PhD and Dorothy Hutchens, PhD at The Healthier People

**Table 10. Variable List**

| Name of Variable | Scale | Items Used for Analysis |
|---|---|---|
| 1. Spirituality | SS | Scale [SPIRIT] |
| 2. Current health status | SS | D4. Which of the following best describes your current health status? [CURRHLTH2] |
| 3. Overall physical health | CARS | 35. Considering your age, how would you describe your overall physical health? [OVERALLHEALTH2] |
| 4. Physical activity | CARS | 36. In an average week, how many times do you engage in physical activity (exercise or work which lasts at least 20 minutes without stopping and which is hard enough to make you breathe heavier and your heart beat faster)? [ACTIVITYLEVEL] |
| 5. Life satisfaction | CARS | 40. In general, how satisfied are you with your life? [LIFSATIS2]<br>41. Have you suffered a personal loss or misfortune in the past year that had a serious impact on your life? [LOSSES2] |
| 6. Tobacco-related risk behaviors | CARS | 12. How many cigars do you usually smoke per day?<br>14. How many times per day do you usually use smokeless tobacco?<br>16. How many cigarettes a day do you smoke?<br>[NO = Does not use tobacco]<br>[YES = Uses at least one (1) of tobacco product] |
| 7. Alcohol-related risk Behaviors | CARS | 23. How many drinks of an alcoholic beverage do you have in a typical week? [Beer + Wine + Wine coolers + Liquor = ALCOHOL] |
| 8. Race | CARS | 42a. Race [RACIALGROUP] |

Network, Inc. in Atlanta, Georgia. This information was sent to The Healthier People Network, Inc. for the purpose of creating individualized health risk appraisal questionnaires to be completed by a convenience sample of college students at The University of Tennessee participating in a study initiated by the investigator. In addition, the SS was included with The CARS in a jacket created specifically to house the two survey instruments.

The investigator requested a meeting with the six instructors teaching the *Personal Health and Wellness* courses and presented an orientation session for the purposes of explaining the research and requesting permission to use the instructor's students as participants in the study. During the meeting, the instructors were each shown a standardized letter that was to be read aloud to the class participants prior to the distribution of the two instruments, namely the SS and The CARS. The standardized letter served as information for the participants explaining the purpose of the questionnaire, instruction on how to complete the questionnaire and an assurance of confidentiality.

At a designated class date predetermined by the principle investigator and each instructor, the SS and The CARS were administered to the participants. The participants were informed that they would receive a personalized health risk appraisal for successfully completing the two instruments. The participants were encouraged to be contemplative and honest in their responses. In addition, the participants were told that their participation was completely voluntary and that they were not required to participate. Questions for clarification about the instructions or the instruments were solicited from the instructor.

In accordance with the Internal Review Board procedures, the combined instruments were distributed in a cover jacket labeled with a barcode to identify the same participants who would receive a computer-generated printout that contained personal lifestyle scores and recommended behavioral changes. An identification card possessing the same number as the barcode on the health risk appraisal was attached to the front folder and during the distribution of the instruments, the participants were instructed to remove and retain the card to ensure receipt of their personalized health risk appraisal. This unique identifier (barcode) was coded to ensure confidentiality and was known only to the custodian of The CARS instrument, Edwin Hutchens, PhD and Dorothy Hutchens, PhD. The identity of the participants in the study was not known to the principal investigator. The participants of the study were completely anonymous.

Upon the completion of the SS and The CARS by the participants, the instruments were gathered by the instructors. Due to the absenteeism of some of the participants, a second day, designated by each class instructor, was utilized for the purpose of distributing any remaining questionnaires that were not completed the first day. After the second day distribution, the completed instruments were returned to the principal investigator. Compilation of all SS and The CARS any uncompleted questionnaires due to absenteeism, participant's dropped from the class roll and/or participant's refusal to complete the questionnaire. Upon finalization of the questionnaire distribution and development of a database, seventy percent (N=154) of the original student sample (N=221) completed the SS and sixty-seven percent (N=147) of the original student sample (N=221) completed The CARS instrument.

The principal investigator placed the culmination of all distributed survey instruments in a cardboard box and sealed the contents. The instruments were transported to the office of The Healthier People Network, Inc. in Atlanta, Georgia and the sealed contents were delivered to Edwin Hutchens, PhD. At The Healthier People Network, Inc., the data were checked for completion and accuracy then, entered into a spreadsheet format using Microsoft Excel 5.0. Completion of the data entry resulted in seventy-four percent (N=161) participant responses to the SS portion of the questionnaire. Upon examination of the data, a significant number of missing values were identified in less than one percent (N=7) of the participant's SS survey instruments. The decision was made to discard the data in the seven SS survey instruments and not include the data in the research analysis. In three additional participant SS survey instruments, three or less missing values were discovered. Due to the small number of missing values included in the three instruments, the decision was made to replace the missing data with group mean responses and retain the data for use in the study. Seventy percent (N=154) participant SS survey instruments were utilized for the statistical treatment in the study.

In addition to the elimination of SS survey instruments, seven CARS survey instruments were eliminated due to failure to complete the health risk appraisal portion of the survey. Sixty-seven percent (N=147) participant The CARS survey instruments were utilized for the statistical treatment in the study. The folders were shredded incapacitating the ability to identify participants in the study.

The personalized health risk appraisal profiles which were to be created from The CARS survey instrument failed to be completed for the participants. Ideally, The CARS

health risk appraisal produces an individualized, computer-generated report identifying current health risks, a CARS Thesaurus providing additional information about the most prevalent health risk factors for the general college student population and a *Healthy Living* contract encouraging participants to work on personal health habits or behaviors that need changing is distributed to the participants in the study. The personalized health risks appraisals were to be distributed by the six instructors in each of the six *Personal Health and Wellness* classes. Due to computerized equipment malfunctioning, the return of The CARS health risk appraisal profiles, in a timely manner, was not completed.

## Analysis of the Data

The objective of this study was to examine the relationship between a measurable construct, spirituality and the overall health and well-being of college students in a university setting. Descriptive procedures were performed to calculate and analyze the mean scores for the age of the students participating in the study, the number and percentage of males and females, the number and percentage of various residences of students participating in the study, the number and percentage of the student's current academic level, the number and percentage of representatives from each ethnic group, the number and percentage of the level of education of each student's mother and the number and percentage of the student's perceived level of current health status.

To address each of the research questions developed during the study, one-way Analysis of Variance (ANOVA), Tukey's HSD post hoc tests, Spearman's rho rank correlations and independent samples t-tests guided the study of relationships between spirituality and other variables including the current health status of college students, overall physical health, physical activity, life satisfaction, tobacco and alcohol-related

health risk behaviors. In addition, the relationship between the self-reported level of spirituality and African Americans and White college students was analyzed.

Newton and Rudestam (1999) explain the rationale for selecting analysis of variance (ANOVA) statistical testing. ANOVA is utilized when "assessing the statistical significance of the relationship between categorical independent variables and a single continuous dependent variable" (pg. 202). The rationale for selecting t-test, "which is the simplest variation of the one-way ANOVA" (Trochim, 2001, pg. 286) is to assess group differences. Both parametric tests, the t-test and ANOVA, apply when the independent variables are nominal or ordinal. The non-parametric method, Spearman's rho rank correlation was utilized when data was non-normally distributed. Data in the study not normally distributed included the current health status and the overall physical health of college students.

## Chapter Summary

This chapter investigated the methodology used to determine the relationship between spirituality and the overall health of the college student in a university setting. The research design was established and external validity was discussed. Derivation of the research questions was included to reflect the research questions being asked in Chapter One. The level of significance selected for the study was an alpha level, or p-value, of .05. The study population was described and the types of instrumentation used in the study were examined. To define how the variables for the study were operationalized, a variable list was presented. A thorough explanation of the data collection process for the study was examined, including data preparation, entering the

data and construction of a database that integrating the SS and The CARS instruments. Finally, the analysis of the data and statistical treatment for the study was discussed.

# CHAPTER IV
# ANALYSIS, INTERPRETATION AND IMPLICATIONS OF THE DATA

## Introduction

The purpose of this chapter was to investigate the relationship between a perceived level of spirituality and the health and well-being of college students in a university setting. This was accomplished by analyzing the data collected from a sample of undergraduate students attending health classes at The University of Tennessee. The participants completed two survey instruments: the Spirituality Scale (SS) and The College Student Appraisal of Risks Survey (The CARS). The primary focus of the study included the measurement of spirituality and health risk factors relating to the health of college students. The data, originally entered into Microsoft Excel 5.0, was imported into the statistical software package, SPSS 12.0 which was utilized for the statistical analyses of the data. This chapter represents findings associated with the survey data collected during the study. Implications of the study are discussed.

## Demographic Descriptive Statistics

The original population in the study included undergraduate college students (N=221) enrolled in *Personal Health and Wellness* health courses in the Health and Safety Programs in the College of Education, Health and Human Sciences at The University of Tennessee in the fall semester of 2004. Upon initial examination of the collected data, a number of missing values were identified in several of the SS and The CARS survey instruments. Ultimately, seventy percent (N=154) participant SS survey instruments were utilized for the statistical treatment in the study and sixty-seven percent (N=147) participant The CARS survey instruments were utilized for the statistical

treatment in the study. Thirty percent (30%) and thirty-three percent (33%) of the college student sample measured by the two survey instruments, respectively, were eliminated from the study due to missing values on either or both the SS and The CARS instruments, students were no longer enrolled in the health classes, students chose not to participate at the time the survey instruments were distributed or students were absent on the days of the distribution.

Statistical descriptive procedures were performed to calculate and analyze the mean scores for the number and percentage of males and females, the number and percentage of representatives from each ethnic group, the number and percentage of various residences of students participating in the study, the number and percentage of the student's current academic level, the number and percentage of the level of education of each student's mother, including a chi-square statistic and the number and percentage of the student's perceived level of current health status.

Table 11 exhibits the mean age score characteristic of the college students who participated in the study. The average age of the participants in the study was twenty-one (21) years of age. See Table 11.

Table 12 illustrates the number and percentage representative of the participant's age status at the time of the research. Of the responding participants, one hundred thirty-four (91%) of the participants are between the age from eighteen to twenty-four, the traditional age range for college students. The traditional age college students found in this study is indicative to the university as a whole considering that enrollment data for fall 2003 represented the undergraduate student population consisting of eighty-eight percent (88%) of college students to be between the age of eighteen and twenty-four

**Table 11. Mean Score of Age Group**

| | | |
|---|---|---|
| N | Valid | 147 |
| | Missing | 7 |
| Mean | | 21.02 |

**Table 12. Percent and No. Responses of Age Group**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 18 | 13 | 8.4 | 8.8 | 8.8 |
| | 19 | 37 | 24.0 | 25.2 | 34.0 |
| | 20 | 30 | 19.5 | 20.4 | 54.4 |
| | 21 | 24 | 15.6 | 16.3 | 70.7 |
| | 22 | 16 | 10.4 | 10.9 | 81.6 |
| | 23 | 9 | 5.8 | 6.1 | 87.8 |
| | 24 | 5 | 3.2 | 3.4 | 91.2 |
| | 25 | 2 | 1.3 | 1.4 | 92.5 |
| | 26 | 3 | 1.9 | 2.0 | 94.6 |
| | 27 | 1 | .6 | .7 | 95.2 |
| | 28 | 2 | 1.3 | 1.4 | 96.6 |
| | 29 | 1 | .6 | .7 | 97.3 |
| | 30 | 3 | 1.9 | 2.0 | 99.3 |
| | 40 | 1 | .6 | .7 | 100.0 |
| | Total | 147 | 95.5 | 100.0 | |
| Missing | System | 7 | 4.5 | | |
| Total | | 154 | 100.0 | | |

(University of Tennessee Fact Book 2003-2004). Thirteen participants (9%) range in age from twenty-five to forty. See Table 12.

Table 13 illustrates the number and percentage of the participants in the study consisted of sixty-seven (46%) male students and eighty (54%) female students. The relationship of males to females is indicative to the university as a whole in as much as enrollment data for fall 2003 represented the undergraduate total student population consisting of forty-nine percent (49%) male students and fifty-one percent (51%) female students (University of Tennessee Fact Book 2003-2004). See Table 13.

Table 14 illustrates the number and percentage of responses from participants in each ethnic group including two (1.4%) Aleutian, Alaska native, Eskimo or American Indian, twenty-nine (20.6%) African American, three (2.1%) Pacific Islander, one-hundred five White (74.5%) students and two (1.4%) students indicated as Other. The two largest groups represented in the study were White and African American students. A larger percentage of African Americans were represented in the study versus representation across the university campus. Enrollment data for fall 2003 indicated African American undergraduate students account for only seven percent (7%) of the total undergraduate population. The White student representation was moderately smaller than representation campus-wide. Enrollment data for fall 2003 indicated White undergraduate students account for eighty-seven (87%) percent of the total undergraduate population (University of Tennessee Fact Book 2003-2004). See Table 14.

Table 15 illustrates the number and percentage of the various residences where students live while attending classes. Eleven (7.1%) of the participants live at home with parents; forty-seven (30.5%) of the participants live in a dormitory; one (.6%) participant

**Table 13. Percent and No. Responses of Male and Female Students**

**Gender**

| | | Frequency | Percent | Valid Percent |
|---|---|---|---|---|
| Valid | Male | 67 | 43.5 | 45.6 |
| | Female | 80 | 51.9 | 54.4 |
| | Total | 147 | 95.5 | 100.0 |
| Missing | System | 7 | 4.5 | |
| Total | | 154 | 100.0 | |

**Table 14. Percent and No. Responses of Ethnic Groups Represented in the Study**

**Racial Group**

| | | Frequency | Percent | Valid Percent |
|---|---|---|---|---|
| Valid | Aleutian, Alaska native, Eskimo or American Indian | 2 | 1.3 | 1.4 |
| | African American | 29 | 18.8 | 20.6 |
| | Pacific Islander | 3 | 1.9 | 2.1 |
| | White | 105 | 68.2 | 74.5 |
| | Other | 2 | 1.3 | 1.4 |
| | Total | 141 | 91.6 | 100.0 |
| Missing | System | 13 | 8.4 | |
| Total | | 154 | 100.0 | |

**Table 15. Percent and No. Responses to Question D1, "When attending classes, where do you live?**

| | | Frequency | Percent | Valid Percent |
|---|---|---|---|---|
| Valid | At home (with parents) | 11 | 7.1 | 7.1 |
| | In a dormitory | 47 | 30.5 | 30.5 |
| | In a fraternity or sorority house | 1 | .6 | .6 |
| | With my spouse and/or children | 10 | 6.5 | 6.5 |
| | Alone in an apartment/rented house | 13 | 8.4 | 8.4 |
| | With others - in an apartment or rented house | 70 | 45.5 | 45.5 |
| | Other | 2 | 1.3 | 1.3 |
| | Total | 154 | 100.0 | 100.0 |

lives in a fraternity or sorority; ten (6.5%) of the participants live with a spouse and/or children; thirteen (8.4%) of the participants live alone in an apartment or rented house; seventy (45.5%) of the participants live with others in an apartment or rented house; and two (1.3%) participants reported other living arrangements utilized while attending classes. One hundred seventeen (76%) of the participants live either in a dormitory or share an apartment with others while attending classes. Ninety-three (60%) of the participants either live with a spouse and/or children, live alone in an apartment or rented house or share an apartment which may indicate more maturity and independence in this segment of the sample under study. See Table 15.

Table 16 illustrates the number and percentage of the participant's current academic level. Of those participating in the study, twenty-two participants (14.3%) were Freshmen, fifty-five participants (35.7%) were Sophomores, twenty-six participants (16.9%) were Juniors, forty-seven participants (30.5%) were Seniors and four participants (2.6%) reported Other. With the exception of the Freshman academic level, college student representation by academic level is indicative of the university as a whole considering that enrollment data for fall 2003 represented the undergraduate student total population consisting of twenty-seven percent (27%) Freshman, twenty percent (20%) Sophomores, twenty-one percent (21%) Juniors and thirty percent (30%) Seniors (University of Tennessee Fact Book 2003-2004). The sample was equally represented between upper-class collegians with seventy-three (47.4%) participants and lower-class collegians with seventy-seven (50%) participants. See Table 16.

Table 17 illustrates the number and percentage of the level of education of each student's mother. Participants in the study reported six (3.9%) mothers as not graduating

**Table 16. Percent and No. Responses to Question D2, "What class/academic level are you in now?**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Freshman | 22 | 14.3 | 14.3 | 14.3 |
| | Sophomore | 55 | 35.7 | 35.7 | 50.0 |
| | Junior | 26 | 16.9 | 16.9 | 66.9 |
| | Senior | 47 | 30.5 | 30.5 | 97.4 |
| | Other | 4 | 2.6 | 2.6 | 100.0 |
| | Total | 154 | 100.0 | 100.0 | |

**Table 17. Percent and No. Responses to Question D3, "What is the level of education of your mother?"**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Less than high school graduate | 6 | 3.9 | 3.9 | 3.9 |
| | High school graduate | 35 | 22.7 | 22.7 | 26.6 |
| | Some college | 33 | 21.4 | 21.4 | 48.1 |
| | College degree | 80 | 51.9 | 51.9 | 100.0 |
| | Total | 154 | 100.0 | 100.0 | |

from high school, thirty-five (22.7%) mothers were high school graduates, thirty-three (21.4%) mothers had some college education and eighty (51.9%) mothers had a college degree. See Table 17. A Chi-square analysis yielded a Pearson's chi-square test statistic of .523 ($p$<.469) indicating that no difference exist between gender and the level of the mother's education. The lack of significance of the tests indicates that there were no effects found therefore, chance could explain the differences.

Table 18 illustrates the number and percentage of the student's self-reported level of current health status. According to the participants, two (1.3%) participants reported their current health status as poor, fifteen (9.7%) reported current health status as fair, ninety-five (61.7%) reported current health status as good and forty-two (27.3%) reported their current health status as excellent. Cumulatively, one hundred thirty-seven (89%) participants reported their current health status ranged from good to excellent. See Table 18.

## Statistical Analysis of Research Questions

The purpose of this section was to investigate the relationship between a self-reported level of spirituality and the health of college students. Descriptive and inferential statistical analyses were performed. Statistical techniques assessing association between variables included one-way Analysis of Variance (ANOVA) using Tukey's post hoc analysis, if needed. The statistical technique, ANOVA was used to determine whether or not the group means were significantly different and rule out the possibility that the group differences were due to random error. When necessary, Tukey's honest significance difference (HSD) test further measured the dispersion of group mean differences by referring to the differences in range between the smallest

**Table 18. Percent and No. Responses to Question D4, "Which of the following best describes your current health?"**

| | | Frequency | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Poor | 2 | 1.3 | 1.3 |
| | Fair | 15 | 9.7 | 11.0 |
| | Good | 95 | 61.7 | 72.7 |
| | Excellent | 42 | 27.3 | 100.0 |
| | Total | 154 | 100.0 | |

group and the largest group (Newton and Rudestam, 1999). In other analyses, Independent-Samples t-Tests were used to address the comparison of group means. To assess the strength of relationship between some variables represented in the study, Spearman rho rank correlations were used to measure ordinal and non normally distributed data.

***Research Question #1: What is the relationship of a self-reported level of spirituality and the current health status of college students?***

College students were asked to rate their current health status as either poor, fair, good or excellent. Upon initial examination of the descriptive data, frequencies revealed that only two (2) participants reported their current health status as poor and fifteen (15) participants reported their current health status as fair. Due to the small response of the two individual groups, the participants rating poor or fair were combined to complete one group. Therefore, seventeen (17) participants reporting their current health status has poor or fair, scored $M$=3.570, $SD$=1.078 on the SS; ninety-five (95) participants, reporting their current health status good, scored $M$=3.945, $SD$=.759 on the SS; and, forty-two (42) participants, reporting their current health status as excellent, scored $M$=4.187, $SD$=.596 on the SS. See Table 19.

To compare the three group mean SS scores with the participant's current health status, a one-way ANOVA procedure was employed. The ANOVA revealed a statistically significant difference between the three groups and the participant's level of current health status with regard to the level of spirituality, $F(2,151)=4.112$, $p$=.018. See Table 20.

**Table 19. Descriptives Reporting Participant's Self-Reported Level of Spirituality and Current Health Status**

**Spirituality Scale Score**

| Current Health Status | Mean | N | Std. Deviation |
|---|---|---|---|
| Fair or Poor | 3.570 | 17 | 1.078 |
| Good | 3.945 | 95 | .759 |
| Excellent | 4.187 | 42 | .596 |
| Total | 3.970 | 154 | .775 |

**Table 20. ANOVA Reporting for Participant's Self-Reported Level of Spirituality by Current Health Status**

**Spirituality Scale Score**

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 4.752 | 2 | 2.376 | 4.112 | .018 |
| Within Groups | 87.253 | 151 | .578 | | |
| Total | 92.005 | 153 | | | |

Because the small *p*-value (.018) indicated that there were group differences, Tukey's HSD was calculated to determine which groups differed. Table 21 illustrated two groups that were identified: (1) one group containing those rating a fair or poor current health status and a good current health status and (2) one group containing those rating a good current health status and an excellent current health status with regard to the level of spirituality. The only significant difference in the groups were those participants rating a fair or poor current health status ($M$=3.570) and those participants rating an excellent current health status ($M$=4.187). The group means ($M$=3.945) appearing in the same column are not significantly different. See Table 21.

By looking at the group means, we see a trend indicating that as spirituality increases, the participant's self-reported current health status increases. A Spearman rho correlation was used to determine the strength of association between the participant's self-reported level of spirituality and current health status. The Spearman rho revealed that the SS score and the participant's current health status were slightly correlated ($r$=.180; $p$=.026). Those participants who scored higher on the SS reported a greater, more positive current health status.

***Research Question #2: What is the relationship of a self-reported level of spirituality and the overall physical health of college students?***

College students were asked to rate their overall physical health as either poor, fair, good or excellent. Upon initial examination of the descriptive data, frequencies revealed that only two (2) participants reported their overall physical health as poor and eighteen (18) participants reported their overall physical health as fair. Due to the small response of the two individual groups, the participants rating poor or fair were combined

**Table 21. Tukey HSD Post Hoc Test Reporting Homogeneous Group Differences Between Participant's Self-Reported Level of Spirituality by Current Health Status**

**Homogeneous Subsets**
**Spirituality Scale Score**

| Current Health Status | N | Subset for alpha = .05 | |
|---|---|---|---|
| | | 1 | 2 |
| Fair or Poor | 17 | 3.570 | |
| Good | 95 | 3.945 | 3.945 |
| Excellent | 42 | | 4.187 |
| Sig. | | .121 | .410 |

to complete one group. Therefore, twenty (20) participants reporting their overall physical health as poor or fair, scored *M*=3.565, *SD*=1.035 on the SS; eighty-two (82) participants reporting their overall physical health as good, scored *M*=3.962, *SD*=.768 on the SS; and thirty-nine (39) participants, who reported their overall physical health as excellent, scored *M*=4.182, *SD*=.589 on the SS. See Table 22.

To compare the three group mean SS scores with the participant's overall physical health, a one-way ANOVA procedure was employed. The ANOVA revealed a statistically significant difference between the three groups and the level of overall physical health with regard to the level of spirituality, F(2,138)=4.258, *p*=.016. See Table 23.

The ANOVA analysis revealed a small *p*-value (.016) indicating that there were group differences. Tukey's HSD was calculated to determine which groups differed. Table 24 illustrated that two groups were identified: (1) one group containing those participants rating a fair or poor overall physical health and good overall physical health and (2) one group containing those participants rating a good overall physical health and an excellent overall physical health with regard to the level of spirituality. The groups that differed consisted of those participants rating a fair or poor overall physical health (*M*=3.565) and those participants rating an excellent overall physical health (*M*=4.182). The group means (*M*=3.962) appearing in the same column are not significantly different. See Table 24.

By looking at the group means, we see a trend indicating that as spirituality increases, the participant's self-reported overall physical health increases. A Spearman rho correlation was used to determine the strength of association between the

**Table 22. Descriptives Reporting Participant's Self-Reported Level of Spirituality and Overall Physical Health**

**Spirituality Scale Score**

| Overall Physical Health | Mean | N | Std. Deviation |
|---|---|---|---|
| Fair or Poor | 3.565 | 20 | 1.035 |
| Good | 3.962 | 82 | .768 |
| Excellent | 4.182 | 39 | .589 |
| Total | 3.967 | 141 | .786 |

**Table 23. ANOVA Reporting for Participant's Self-Reported Level of Spirituality by Overall Physical Health**

**Spirituality Scale Score**

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 5.022 | 2 | 2.511 | 4.258 | .016 |
| Within Groups | 81.373 | 138 | .590 | | |
| Total | 86.395 | 140 | | | |

**Table 24. Tukey HSD Post Hoc Test Reporting Homogeneous Group Differences Between Participant's Self-Reported Level of Spirituality by Overall Physical Health**

**Spirituality Scale Score**

| Overall Physical Health | N | Subset for alpha = .05 | |
|---|---|---|---|
| | | 1 | 2 |
| Fair or Poor | 20 | 3.565 | |
| Good | 82 | 3.962 | 3.962 |
| Excellent | 39 | | 4.182 |
| Sig. | | .087 | .465 |

participant's self-reported level of spirituality and overall physical health. The Spearman rho revealed that the SS score and the participant's overall physical health were slightly correlated ($r$=.186; $p$<.027). Those participants who scored higher on the SS reported a greater, more positive overall physical health.

***Research Question #3: What is the relationship of a self-reported level of spirituality to the physical activity of college students?***

Descriptive statistics indicate that twenty-two (22) participants, who reported spending less than one time per week on physical activity, scored $M$=3.535, $SD$=.962 on the SS; thirty-nine (39) participants, reporting physical activity 1 or 2 times per week scored $M$=3.972, $SD$=.819 on the SS; and, seventy-nine (79) participants reporting physical activity at least 3 times per week scored $M$=4.073, $SD$=.678 on the SS. See Table 25.

Because the standard deviations for the three groups were somewhat similar and to compare the mean SS scores with the participant's level of physical activity, a one-way ANOVA procedure was employed. The ANOVA revealed a statistically significant difference between the three groups and the level of physical activity with regard to the level of spirituality, $F(2,137)=4.232$, $p$=.016. See Table 26.

The ANOVA analysis revealed a small $p$-value (.016) indicating that there were group differences. Tukey's HSD was calculated to determine which groups differed. Table 27 illustrated that two distinct groups were identified: (1) one group containing those participants rating physical activity level less than one time per week and (2) one group containing those participants rating physical activity levels one or two times per week and at least three times per week with regard to the level of spirituality. One group

**Table 25. Descriptives Reporting Participant's Self-Reported Level of Spirituality and Physical Activity**

**Spirituality Scale Score**

| ActivityLevel | Mean | N | Std. Deviation |
|---|---|---|---|
| Less than 1 time per week | 3.535 | 22 | .962 |
| 1 or 2 times per week | 3.972 | 39 | .819 |
| At least 3 times per week | 4.073 | 79 | .678 |
| Total | 3.960 | 140 | .785 |

**Table 26. ANOVA Reporting for Participant's Self-Reported Level of Spirituality by Physical Activity**

**Spirituality Scale Score**

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 4.990 | 2 | 2.495 | 4.232 | .016 |
| Within Groups | 80.756 | 137 | .589 | | |
| Total | 85.745 | 139 | | | |

**Table 27. Tukey HSD Post Hoc Test Reporting Homogeneous Group Differences Between Participant's Self-Reported Level of Spirituality by Physical Activity**

**Spirituality Scale Score**

| | | Subset for alpha = .05 | |
|---|---|---|---|
| **ActivityLevel** | **N** | **1** | **2** |
| Less than 1 time per week | 22 | 3.534 | |
| 1 or 2 times per week | 39 | | 3.972 |
| At least 3 times per week | 79 | | 4.073 |
| Sig. | | 1.000 | .844 |

differed from the other two groups. The group most dissimilar consisted of those participants rating physical activity less that one time per week (*M*=3.534). The two groups containing those participants rating physical activity levels one or two times per week (*M*=3.972) and at least three times per week (M=4.073) with regard to the level of spirituality did not differ. The group means (*M*=3.972, *M*=4.073) appearing in the same column are not significantly different. Participant's with an increased level of physical activity scored higher on the SS. See Table 27.

***Research Question #4: What is the relationship of a self-reported level of spirituality to the life satisfaction of college students?***

Frequency data revealed that three (1.9%) participants were not satisfied with their life, thirty-five (22.7%) participants were partly satisfied with their life and one hundred one (65.6%) participants were mostly satisfied with their life. Due to the small number of participants who indicated that they were not satisfied with life, this group was combined with the participants who indicated that they were partially satisfied with life. Descriptive statistics indicated that the thirty-eight participants comprising the new group, who reported being unsatisfied with life, scored *M*=3.652, *SD* = .878 on the SS. The one hundred one (101) participants, who reported being mostly satisfied with their life, scored *M*=4.085, *SD*=.726 on the SS. See Table 28.

To compare the means of the two groups, an independent-samples t-test procedure was produced. Because the Levene's Test for Equality of Variances was high (*p*=.153), the results that assumed equal variances for both groups were used. Results of the t-test were (*t*=-2.959, *df*=137, *p*=.004) indicating that there was a significant difference between the two group means. Those participants indicating that they experienced more

**Table 28. Descriptives Reporting Participant's Self-Reported Level of Spirituality by Life Satisfaction**

**Spirituality Scale Score**

| Life Satisfaction | N | Mean | Std. Deviation |
|---|---|---|---|
| Unsatisfied | 38 | 3.652 | .878 |
| Mostly satisfied | 101 | 4.085 | .726 |

life satisfaction scored higher on the SS than those who indicated that they were not satisfied with their life.

Descriptive statistics indicate that fifty-four participants reported that they had suffered a personal loss or misfortune in the past year which had an impact on their life of which, scored *M*=3.903, *SD* = .808 on the SS. Eighty-five participants reported that they had not suffered a personal loss or misfortune in the past year of which, scored *M*=4.012, *SD*=.781 on the SS. See Table 29.

To compare the means of the two groups, an independent-samples t-test procedure was produced. Because the Levene's Test for Equality of Variances was high (*p*=.643), the results that assumed equal variances for both groups were used. Results of the t-test were (*t*=-.789, *df*=137, *p*=.431) indicating that there was not a significant difference between the two group means. The participant's self-reported level of spirituality was not affected by the participant experiencing some loss or misfortune in the past year.

***Research Question #5: What is the relationship of a self-reported level of spirituality to the tobacco-related health risk behaviors of college students?***

Tobacco-related risk behavior characterized by the dichotomous variables [Yes or No] were calculated from the number of cigars, cigarettes and smokeless tobacco reportedly used by the participants in the study either currently or in the past two years. Descriptive statistics indicate that twenty nine (29) participants reporting that they have used tobacco scored *M*=3.655, *SD*=.778 on the SS and one hundred eighteen participants reporting that they have never used tobacco scored *M*=4.054, *SD*=.762 on the SS. See Table 30.

**Table 29. Descriptives Reporting Participant's Self-Reported Level of Spirituality by Life Losses or Problems**

**Spirituality Scale Score**

| Loss or Problems | N | Mean | Std. Deviation |
|---|---|---|---|
| Yes | 54 | 3.903 | .808 |
| No | 85 | 4.012 | .781 |

**Table 30. Group Statistics Reporting Participant's Self-Reported Level of Spirituality and Tobacco Use**

**Spirituality Scale Score**

| Use Tobacco | N | Mean | Std. Deviation |
|---|---|---|---|
| Yes | 29 | 3.655 | .778 |
| No | 118 | 4.054 | .762 |

To compare the means of the two groups, an independent-samples t-test procedure was produced. Because the Levene's Test for Equality of Variances was high ($p$=.998), the results that assumed equal variances for both groups were used. The significance level for the t test was ($t$=2.515, $df$=145, $p$=.013) indicating a significant difference between the two group means. Participants who indicated that they used tobacco had a lower self-reported level of spirituality, whereas those who indicated that they did not smoke had a higher self-reported level of spirituality.

***Research Question #6: What is the relationship of a self-reported level of spirituality to the alcohol-related health risk behavior of college students?***

Descriptive statistics indicated that ninety nine participants (69.5%) consume one (1) to fifty (50) alcoholic beverages, consisting either of beer, wine, wine coolers or liquor, on a weekly basis ($M$=13.283, $SD$ =11.131). Beer ($M$=11.33, $SD$=9.507) and liquor ($M$=4.12, $SD$=3.036) consumption account for the most alcohol consumed by the reporting participants. See Table 31.

A Spearman rho correlation revealed that the SS score and the participants' weekly alcohol consumption were significantly negatively correlated ($r$=-.327; $p$<.001) indicating that as alcohol consumption increased, the participants' self-reported level of spirituality decreased.

***Research Question #7: Are there significant group differences between African American and White college students and a self-reported level of spirituality?***

Descriptive statistics indicated that twenty-nine (29) participants, who reported their individual race description as African American scored $M$=4.374, $SD$=.382 on the SS and one hundred five (105) participants, who reported individual race description as

**Table 31. Descriptives Reporting Participant's Self-Reported Weekly Alcohol Consumption**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| Alcohol | 99 | 1.00 | 50.00 | 13.283 | 11.131 |
| BeersPerWeek | 80 | 1 | 35 | 11.33 | 9.507 |
| LiquorPerWeek | 78 | 1 | 15 | 4.12 | 3.036 |
| Valid N (listwise) | 62 | | | | |

White scored $M$=3.865, $SD$=.833 on the SS. Due to the small sample comprising the other racial groups, they were not considered for analysis. See Table 32.

To compare the means of the two groups consisting of African American and the White undergraduate college students, an independent-samples test procedure was produced. Because the Levene's Test for Equality of Variances was low ($p$<.001), the results that do not assume equal variances for both groups were used. The significance level for the t test was ($t$=4.721, $df$=102, $p$<.001) indicating that there was a significant difference in the participants' self-reported level of spirituality between African American and White college students. Although the number of African American participants was somewhat limited, the data suggest a trend that the African American participants value their spirituality more than the White study participants.

## Implications of the Study

Upon examination of the results, the following research implications are introduced. A review of the literature revealed that scholarly experts, medical professionals and other scientists have found a significant relationship between an individual's perceived level of spirituality and health. This study addressed whether or not a relationship exists between a perceived level of spirituality and the health of college students in a university setting.

From the original student sample (N=221), seventy percent (70%) of students completed the SS and sixty seven percent (67%) of students completed The CARS instrument. The undergraduate college student sample was highly representative of the college student population across the university campus with regard to age, gender and

**Table 32. Descriptives Reporting Participant's Self-Reported Level of Spirituality and Racial Groups**

**Spirituality Scale Score**

| RacialGroup | N | Mean | Std. Deviation |
|---|---|---|---|
| African American | 29 | 4.374 | .382 |
| White | 105 | 3.865 | .833 |

academic grade level. In addition, the college student sample exceeded campus wide ethnic boundaries with regard to the African American undergraduate college student sample. The African American sample consisted of almost three times (20.6% versus 7%) as many African American undergraduate college students enrolled at the university as a whole.

The normal representation characterized by the undergraduate college student study population helps to substantiate more significant implications about findings associated with the various research questions presented in the study. When examining the relationship of a self-reported level of spirituality and the current health status of college students, a One-Way ANOVA revealed a statistically significant difference between how the participants rated their current health status with regard to the self-reported level of spirituality, ($F(2,151) = 4.112$, $p=.018$. Spirituality and the current health status of college students are, in effect, significantly related. Tukey's HSD found that the group differences were identified between the groups rating Fair or Poor and Excellent. The Spearman rho correlation revealed a weak but positive, linear relationship between the two variables ($r =.180$; $p =.026$).

Additionally, when examining the relationship of a self-reported level of spirituality and the overall physical health of college students, a One-Way ANOVA revealed a statistically significant difference between how the participants rated their overall physical health with regard to the self-reported level of spirituality, ($F(2,138) = 4.258$, $p=.016$. Spirituality and the overall physical health of college students are, in effect, significantly related. Tukey's HSD found that the group differences were identified between the groups rating Fair or Poor and Excellent. The Spearman rho

correlation revealed a weak but positive, linear relationship between the two variables ($r$ =.186; $p$ =.027).

The findings of the first two research questions addressing the college student's (1) current health status and (2) overall physical health were very similar. The Spearman's rho correlational treatment for current health status ($r$=.180; $p$=.026) and overall physical health ($r$=.186; $p$=.027) indicate positive and linear relationships with regard to the college student's level of spirituality. Because of the close similarity of the results of the ANOVA, Tukey's HSD and Spearman's rho correlational statistical treatments, the participant responses appear to equate both questions to physical health and fail to encompass other dimensions of health when reporting current health status.

A review of the literature found a frequent assessment of health characterized as multidimensional (Chandler et al, 1992; Perrin and McDermott, 1997; Miller and Thoresen, 1999; Hettler, 2004; Payne et al, 2005). Specifically, the Holistic Wellness Model by Chandler et al and William Hettler's Six Dimensions of Wellness explain the various dimensions and characteristics of health, specifically the physical, intellectual, social, spiritual, emotional and occupational health dimensions. Due to the representation of college students enrolled in *Personal Health and Wellness* classes, differentiation between the health dimensions was expected for the current study. The aforementioned health classes specifically make reference to the different dimensions of health using the text, *Understanding Your Health* (Payne et al, 2005).

Due to the similar responses given to both questions, it is questionable that the participant's in the study applied the concept of the multidimensionality of health when reporting current health status. The implications of this assessment may indicate a further

need for redefining health to encompass more than just the biomedical concept of health so readily accepted and broadening the concept of health to include other dimensions thereby, gaining a more practical assessment when relating a level of spirituality to the health of the individual.

When examining the relationship of a self-reported level of spirituality and the physical activity of college students, a One-Way ANOVA revealed a statistically significant difference between how the participants rated their physical activity with regard to the self-reported level of spirituality, ($F(2,137) = 4.232$, $p=.016$. Spirituality and the physical activity of college students are, in effect, significantly related. Tukey's HSD found that college students, who engaged in a physical activity consisting of exercise or work which lasts at least twenty minutes, scored higher on the SS if they comprised the groups exercising one to three times per week.

Although a review of the literature produced no studies with regard to a level of spirituality and the physical activity particularly, for young adults, Payne et al (2005) express a relationship and indicates that the benefits from physical activity are not just limited to biological physical fitness but increases one's spiritual health through emotional and social personal components. Therefore, the implication of the findings presented in the current study represent a need for further investigation into the relationship between a self-reported level of spirituality and physical activity of young adults.

When examining the relationship of a self-reported level of spirituality and the life satisfaction of college students, descriptive data revealed that the majority of college students (73%) are mostly satisfied with their life. An Independent Samples Test

compared the means of those participants who are mostly satisfied with life and those participants who are unsatisfied with life and found that the groups differed. Spirituality and life satisfaction of college students are, in effect, significantly related, such that those scoring higher on the SS are more satisfied with life. However, spirituality and life loss[es] or misfortune[s] are not related considering those scoring higher on the SS did not score significantly higher than those who had reportedly experienced personal loss[es] or misfortune[s] in the past year.

Group differences between college students and whether or not they experienced some degree of life satisfaction with regard to a self-reported level of spirituality was found to be significant. This finding was consistent with Frankel and Hewitt (1994) since their examination between religion and health focused on groups affiliated with religious organizations on campus who reportedly were happier ($t$=3.27; $p$<.01) and more satisfied with life ($t$=4.39; $p$<.001).

College students in the current study, who reported suffering a personal loss[es] or misfortune[s] within the past year with regard to the level of spirituality was found not to be significant. Therefore, while spirituality is significantly related to life satisfaction, there is no evidence indicating that an individual's level of spirituality is related to personal loss or misfortune, life stressors associated with defining a level of life satisfaction.

The implications of this finding may indicate that while an individual's level of spirituality may contribute to an overall state of perceived life satisfaction, the college student may counter specific stressful life events using other strategies not identified in the current study. In the study by Kolchakian and Sears (1999), who examined the health

promoting effects of religious coping, the investigators found that religious coping may be used only in extreme cases of severe life stress and that college students were more likely to utilize family and social encounters to relieve stressful episodes. Although not addressed in the current study, a similar explanation may exist for the lack of association between a self-reported level of spirituality and personal loss and/or misfortune.

When studying the relationship of a self-reported level of spirituality and tobacco-related health risk behaviors of college students, different types of tobacco use by college students were examined including cigars, smokeless tobacco, and cigarettes. The data collected was based on tobacco related health risk behavior exercised currently or within the past two years. Descriptive statistics indicated twenty nine (20%) college students have used and are currently using some type of tobacco product. An Independent Samples t-test compared the means of participants who use tobacco and participants who do not use tobacco and found a significant group difference. Spirituality and college students who use tobacco are, in effect, significantly related, such that those scoring higher on the SS are more likely not to use tobacco.

When studying the relationship of a self-reported level of spirituality and alcohol-related health risk behavior of college students, a Spearman's rho correlational analysis ($r$=-.327; $p$<.001) revealed a significantly negative association between the college student's reported level of spirituality and weekly alcohol consumption. In the study population, as the self-reported level of spirituality increased, weekly alcohol consumption decreased.

When addressing tobacco-related and alcohol-related health risk behaviors, the current study indicated that there was a significant relationship between the stated health

risk behaviors with regard to a self-reported level of spirituality. This is consistent with other studies addressing tobacco and alcohol-related health issues on college campuses. For example, the relationship between smoking and the student's level of spirituality was one factor examined by Hestick et al (2001) when assessing the extent of cigarette smoking and identify health risk factors. The study found that whether or not a student chose to smoke contributed, in part, to their level of spirituality and that the individual's level of spirituality was one strong predictor against lifetime smoking. Additionally, Larson and Larson (2003) reported significant evidence indicating that young adults who reported to be religious or spiritual were less likely to partake in risky health behaviors such as drinking alcohol, taking drugs and/or using tobacco. Herein lies the significance and need for the continuance of study in a person's perceived level of spirituality and health factors associated with harmful effects often found in the university setting.

When examining whether or not significant group differences existed between African American (20.6%) and White (78.4%) college students with regard to the self-reported level of spirituality, an Independent Samples Test compared the means of African Americans and White college students and found that the groups significantly differed. The self-reported level of spirituality and African American college students was significantly more related than the self-reported level of spirituality and White college students.

The current study was consistent in its findings with other studies regarding African Americans and a self-reported level of spirituality in relation to White college students. Herndon (2003), who explored the role of spirituality in the lives of the African American male in a university setting, found that African Americans embrace spiritual

values differently than White college students. Implications strongly suggest the significance of further study of cultural characteristics contributing to the relationship between spirituality and health. Overall, the current study found a relationship between a self-reported level of spirituality and the health of college students in a university setting.

## Chapter Summary

The purpose of this study was to investigate the relationship between a self-reported level of spirituality and the health and well-being of college students. This chapter presented the statistical analysis and interpretation of the data collected from college students using the Spirituality Scale (SS) and The College Student Appraisal of Risks Survey (The CARS) assessment instruments. Demographical descriptive statistics were used to describe variables characteristic of the study sample. The statistical techniques chosen to answer the research questions in the study included the One-Way Analysis of Variance (ANOVA) and pairwise methods including Tukey's post hoc analysis, if needed, to address group differences, Independent Samples Tests and Spearman rho correlation analysis. Implications for the results of the study were addressed.

# CHAPTER V
# FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

## Summary of Study

The purpose of this study was to determine the relationship between the self-reported level of spirituality and the health of college students in a university setting. In the past three decades, the regeneration of research interest involving the dimension of spirituality in different health-related settings, such as healthcare, health education and health promotion and its relationship to the health status of college and university students has increasingly been addressed. Moreover, the academic community has embraced the opportunity to investigate the role spirituality plays in the health of college students.

A thorough review of the literature contributed to the legitimacy of the research. Frequently, the research studies addressed in the current study included studies inquiring of the relationship found between religion, with the inclusion of spiritual characteristics, and health outcomes rather than directly addressing spirituality and health. However, due to the close association between spirituality and the subset, religion, the meaning and significance for the inclusion of the studies in the literature review were considered appropriate. Consisting of three sections, the literature review concentrated on research literature in relation to content i.e., spirituality and health, literature in relation to methodology and literature in relation both to spirituality and health and methodology. According to the content section of the study, scholarly and professional experts in the study of health and spirituality are continually strengthening the association between human development, understanding and overall health and wellness with the primary task

of operationalizing spirituality permitting its inclusion into scientific inquiry. In the methodology section of the literature review, statistical analyses cited in previous studies led the researcher when determining various statistical methods for the scientific study in the relationship between spirituality and health. In the content and methodology section, the literature review produced few studies determining a relationship between spirituality and health among the college student population. The need for this research was fueled by a small number of studies relating to spirituality and health in a university setting.

The Holistic Wellness Model, a theoretical framework for the study, was utilized to explain the relationship between the individual's level of spirituality and other dimensions namely, physical, emotional, social, occupational, and intellectual dimensions responsible for the health and well-being in one's life.

The instruments used in the study included the Spirituality Scale (SS), a thirteen item scale that measures the construct, spirituality and The College Student Appraisal of Risks Survey (The CARS), a health risk appraisal that assesses health risk factor values and mortality statistics of college students. In the present study, a reliability analysis using SPSS 12.0 for Windows was computed and the internal consistency reliability estimates were determined by using Cronbach's Alpha (α) which yielded a coefficient alpha of .96 (α=.956) for the SS instrument. The high-item inter-item correlations for all item pairings ranged from $r$=.320; p<.01 to $r$=.806; p<.01. The mean strength for the SS score assessed among the participants in the study was 3.97 (SD=.78), the median score was 4.08 and the mode was five.

The SS partnered with The CARS health risk appraisal advanced the study in the relationship between spirituality and the health of college students. The two

measurements were administered to two hundred twenty one (221) college students attending *Personal Health and Wellness* classes at The University of Tennessee during the fall semester in 2004.

The study specifically sought to address the following research questions:

1. What is the relationship of a self-reported level of spirituality and the current health status of college students?
2. What is the relationship of a self-reported level of spirituality and the overall physical health of college students?
3. What is the relationship of a self-reported level of spirituality to the physical activity of college students?
4. What is the relationship of a self-reported level of spirituality to the life satisfaction of college students?
5. What is the relationship of a self-reported level of spirituality to the tobacco-related health risk behaviors of college students?
6. What is the relationship of a self-reported level of spirituality to the alcohol-related health risk behavior of college students?
7. Are there significant group differences between African American and White college students and a self-reported level of spirituality?

The study population consisted of sixty-seven (46%) male students and eighty (54%) female students. Variables were defined and a variable list was presented. Health information acquired using The CARS, in conjunction with the information derived from the SS, addressed three personal dimensions including the physical, emotional and social

dimensions found within the Holistic Wellness Model. Two personal component dimensions, intellectual and occupation were not addressed in this study.

The data collection process for the study was examined, including data preparation, entering the data and construction of a database that integrating the SS and The CARS instruments. The analysis of the data and statistical treatments used in the study included various statistical techniques comprising the methodology used to determine the relationship between spirituality and the health status of college students in a university setting. The statistical techniques chosen to answer the research questions in the study included the One-Way Analysis of Variance (ANOVA), Tukey's post hoc analysis, if needed, to address group differences, Independent Samples Tests and Spearman rho correlation analysis. In addition to the demographical descriptive statistics used to describe variables characteristic of the study sample, interpretations of the data specifically addressing the research questions were presented.

## Findings

Based on the analyses of the data in the study, the following general findings were revealed about the study population.

### *Demographics of the Study Population*

From the original student sample (N=221), seventy percent (70%) of students completed the SS and sixty seven percent (67%) of students completed The CARS instrument. Forty six percent (46%) of those participating in the study were male and fifty four percent (54%) included female participants. Ninety one percent (91%) of the college students ranged in age from eighteen to twenty-four, the traditional age for the college student. The average age of the participants in the study was twenty one (21)

years. More than fifty percent (51%) of the study population had mother's who completed a college education. Various ethnic groups were represented in the study with the African American (20.6%) and White (74.5%) populations comprising the largest number of participants based on ethnicity. Of those students participating in the study, fifty percent (50%) were represented as lower-class collegians and more than forty seven percent (47.4%) were represented as upper-class collegians with 2.6% reporting some other academic level. While attending college classes, either the majority of participants (76%) live in a dormitory or share an apartment with others.

The statistical analyses of data related to the specific research questions for the study resulted in the following findings:

***Research Question #1***

When analyzing the relationship of a self-reported level of spirituality and the current health status of college students, spirituality and the current health status of college students are, in effect, significantly related. The strength of the association indicates a weak but positive, linear relationship between the two variables.

***Research Question #2***

When analyzing the relationship of a self-reported level of spirituality and the overall physical health of college students, spirituality and the overall physical health of college students are, in effect, significantly related. The strength of the association indicates a weak but positive, linear relationship between the two variables.

***Research Question #3***

When analyzing the relationship of a self-reported level of spirituality and the physical activity of college students, spirituality and the physical activity of college students are significantly related.

***Research Question #4***

When analyzing the relationship of a self-reported level of spirituality and the life satisfaction of college students, spirituality and life satisfaction of college students are significantly related. In addition to examining the relationship between spirituality and the life satisfaction, one or more personal loss[es] or misfortune[s] reportedly suffered by the college student within the past year was examined. Spirituality and life loss[es] or misfortune[s] are not related.

***Research Question #5***

When studying the relationship of a self-reported level of spirituality and tobacco-related health risk behaviors of college students, spirituality and college students who use tobacco are, in effect, significantly related, such that those scoring higher on the SS are more likely not to use tobacco.

***Research Question #6***

When studying the relationship of a self-reported level of spirituality and alcohol-related health risk behavior of college students, findings revealed that as the self-reported level of spirituality of the college student increased, weekly alcohol consumption decreased. Therefore, there is a significantly negative association between the college student's reported level of spirituality and weekly alcohol consumption.

***Research Question #7***

When examining whether or not significant group differences existed between African American (20.6%) and White (78.4%) college students with regard to the self-reported level of spirituality, the study revealed that the self-reported level of spirituality and African American college students was significantly more related than the self-reported level of spirituality and White college students.

## Conclusions

The research findings in this study were consistent with the initial expectation that there is a significant relationship between spirituality and the health of college students in a university setting. The conclusions are based upon the analysis of the research questions that were designated to determine if certain health areas, risks and behaviors, of particular interest when studying the college student population, were impacted by the students' self-reported level of spirituality. The lack of investigation with regard to spirituality and the health of young adults fueled the importance of the research. Additionally, results were consistent with regard to a self-reported level of spirituality and the ethnicity of the study population. The validity and reliability of the Spirituality Scale (SS) were also found to be consistent with previous findings.

Based upon the results presented in this study, the following conclusions were drawn:

1. The positive relationship that exists between the college students' current health status with regard to a self-reported level of spirituality is evidence that college students who regard themselves as healthy individuals are integrating a spiritual component into the concept of what defines health and wellness for the individual.

2. The positive relationship between the college students' overall physical health with regard to a self-reported level of spirituality is evidence that college students who regard themselves as possessing better overall physical health are integrating a spiritual component into that which is considered a physical dimension of health, thereby experiencing optimal physical development and personal growth.

3. The positive relationship between the college students' increased participation in physical activity, e.g. exercise or work with regard to a self-reported level of spirituality is evidence that college students' are integrating a spiritual component into the pursuit of optimum physical attributes, such as increased endurance, strength and flexibility.

4. The positive relationship between college students', who reported experiencing more life satisfaction, with regard to a self-reported level of spirituality is evidence that college students are integrating a spiritual component into the emotional dimension of health. Emotionally healthy college students are more likely to experience attributes, as described by Hettler (2004), such as being open to personal development, more willing to accept challenges and approach life positively and responsibly. The integration of a spiritual component suggests a more harmonious and enlightened experience when confronting emotional challenges.

5. The positive relationship between college students, who are less likely to practice risky tobacco-related health behaviors, with regard to a self-reported level of spirituality is evidence that college students are integrating a spiritual component into the social, emotional and physical dimensions related to health and well-being. Non-smoking college students, fortified with spirituality, are less likely to succumb to peer

pressure in regard to using tobacco, more likely to promote healthy behavior, practice independence and experience better physical health.

6. The positive relationship between college students, who are less likely to drink alcohol, with regard to a self-reported level of spirituality is evidence that college students are integrating a spiritual component into the social, emotional, and physical dimensions of health. College students, who abstain from drinking alcohol are less likely to partake in risky health behaviors that could negatively affect themselves and the community as a whole. Examples of negative health risk behaviors include operating a vehicle under the influence of alcohol endangering themselves and the lives of others, binge drinking, drugs, violence and permissive sexual behavior.

7. Group differences between African American college students and White college students with regard to a self-reported level of spirituality is evidence that the African American study population value the integration of spirituality in other dimensions of life.

The conclusions confirm that young adults are partnering a spiritual component with other health dimensions to address today's important health issues. Understanding the significance of the role spirituality plays in other health dimensions should lead to a better understanding of its contribution to health and wellness within the university community as a whole.

## Recommendations

The following recommendations are based on the findings and conclusions of this study.

1. Change the name of the Spirituality Scale (SS) to eliminate the possibility that the name of the scale does not evoke a strong reaction and contribute to socially

desirable answers. Labeling a scale by the name of the construct being measured, may cause people taking the scale to answer the items in a way that they feel is consistent with the title, rather than how they think they are on each individual item (Lounsbury, J.W., Gibson, L.W. & Saudargas, R.A., in press).

2. Assessment instruments should clarify questions regarding the overall health of the individual. When necessary, the questions should be explicitly worded to reflect the multidimensionality of health.
3. Major health issues conducive to the college student population should have been addressed including sexual behaviors, drug use, violence, and suicide.

## Recommendations for Future Research

To determine more precisely the effectiveness of the relationship between spirituality and health, further research must be conducted. Areas in which future study may broaden the concepts introduced in the current study include the following recommendations for future research.

1. Rename the Spirituality Scale (SS) to be used in future research.
2. Validation of an instrument should continue. Therefore, future implications for the validation of the Spirituality Scale (SS) indicate establishing further evidence of reliability of the scale and approach construct validity using the Multitrait-Multimethod Matrix (MTMM). The use of this methodology could further the evidence of convergent and discriminant validity. Other types of validation should be sought in addition to construct validity.
3. Establish norms for the SS, e.g. making the scale available to other researchers.

4. Research additional major health issues conducive to the college student population including sexual behavior, drug use, violence, and suicide.
5. Research other population samples e.g., college students enrolled in other disciplines in university settings using the same instruments.
6. Address more health issues that involve cultural characteristics, e.g., African American college students and nutritional value of meals with regard to spirituality.
7. Broaden research to examine the relationship of spirituality in other venues e.g., the relationship between spirituality and the health of members in faith-based organizations.

## Chapter Summary

The purpose of this study was to investigate the relationship between the health and well-being of college students and their self-reported level of spirituality. The problem for this study was whether or not college students, who hold some intrinsic value for the inclusion of spirituality in their life, experience a more positive individual health, well-being and quality of living. To the extent that can be determined, there has been limited research into the relationship of the health of college students and their self-reported level of spirituality. Overall, the current study found a relationship between a self-reported level of spirituality and the health of college students in a university setting.

# CHAPTER VI
# THE STUDY IN RETROSPECT

This chapter represents a retrospective review of the study. The purpose of the study was to investigate the relationship between a perceived level of spirituality and the health of college students in a university setting. While the major causes of death in many developed countries include chronic diseases, behavior patterns are evolving as prominent contributors to mortality (Glantz, Rimer and Lewis, 2002). Meanwhile, Buchanan (2000) reminds us that the substance of health lay not solely in health status indicators such as morbidity and mortality rates but, in the total well-being of the individual. Health is the instrument used in the pursuit of individual well-being and as proclaimed by Aristotle, "well-being is the highest goal of human activity" (pg. 106). Therefore, well-being is the person in his(er) entirety and the culmination of many dimensions of human development.

This study focused on health with regard to spirituality primarily, due to the insatiable interest by the investigator researching the study and because research in this area has been neglected. Miller and Thoresen (2003) state that many scholarly experts, professionals and medical practitioners have contributed to the belief that spirituality and science do not mix. Rebuking those that argue spirituality *cannot* be studied scientifically, the authors cite an endless stream of scholarly journals and other literary venues contrarily devoted to the task e.g., *Journal of the Scientific Study of Religion.* And to those that argue spirituality *should not* be studied scientifically, the authors gently chastise those who might thwart the opportunity to help people achieve higher levels of health, wellness and life satisfaction.

The goal of this particular research sounded simple, to find relationships that may exist between health, spirituality and college students. However, the difficulty lay in extracting and culminating information from entities so rich in history and culture, wrapped within their own individualism, thereby creating endless possibilities. The advantage found in this broad, seemingly unending forum is the prospect for future research in this arena.

Despite the need for the study, there were some problems encountered. The most daunting aspect of the research project included the amount of time necessary to bring the study to the final stage of development. Although the time element involved may have been within an element of normalcy for the more experienced, this researcher's underestimation of time came as a surprise and not without some frustrations.

For example, the construction and validation of the Spirituality Scale (SS) took much time and effort. The development of the scale was tedious and the undertaking was demanding. Many hours were delineated for research, reviewing the literature and psychometric study. In addition, although my committee members were readily available individually when called upon, finding the time for meetings proved somewhat difficult due to demanding schedules.

The CARS health risk appraisal instrument was chosen based upon recommendations from Robert Pursley, PhD, who had used another version of The College Student Appraisal of Risks Survey supplied by The Healthier Peoples Network, Inc. and highly recommended its inclusion in the current study. Edwin Hutchens, PhD and Dorothy Hutchins, PhD were invaluable contributors to the study, serving as

recipients of the original data and entering the data into the statistical software by the terms presented in the IRB granted for the purposes of this study.

The only problem encountered using the health risk appraisal was the inability to produce the student's individual health risk appraisals. These were to be returned to the students prior to the end of the fall semester. However, a mechanical failure of the equipment used to read the health risk data and produce the individual health information was unavoidable.

Beyond the problems mentioned, the research proceeded as planned and few obstacles were encountered and none were insurmountable.

A final word on the importance of the study as it relates to the college student's overall health with regard to a perceived level of spirituality. College students are unique individuals, who are thrust into an environment that requires an instantaneous responsibility toward developing and sustaining a degree of personal independence while maintaining an optimum balance between physical health, emotional well-being and an insightful intellect. For the first time in the lives of many college students, not only is this a time of progressive scholarly pursuit, but a time of personal exploration, a time to search for hope and a meaning to life.

In so doing, college students are exploring spirituality. If not within the halls of the university's religious organizations, then within and of themselves, seeking a foundation on which to embrace traditions and beliefs that will eventually accompany their spiritual pilgrimage throughout their lives. The scholarly community should respond with enthusiasm. In the words of a great leader in education for over forty years, Ernest Boyer wrote,

Education for what purpose? Competence to what end? At a time in life when values should be shaped and personal priorities sharply probed, what a tragedy it would be if the most deeply felt issues, the most haunting questions, the most creative moments were pushed to the fringes of our institutional life (Sawatsky, 2004, pg. 9).

# LIST OF REFERENCES

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# APPENDIX

## APPENDIX A

27-Item Spirituality Scale (SS)

This questionnaire is being conducted as part of a class requirement for Psychology 607 at the University of Tennessee. If you have any questions, please call Linda Nelms (865) 974-4215 (Campus Address: Department of Health and Exercise Science, 1914 Andy Holt Ave). Your responses will be treated as anonymous. You are under no obligation whatsoever to answer any question you do not wish to answer. Your participation in completing this instrument is voluntary.

Please pick a number from the scale to show how much you agree or disagree with each statement and write it in the space at the right of the item.

1 = Strongly Agree
2 = Agree
3 = Neutral
4 = Disagree
5 = Strongly Disagree

1. My spiritual beliefs help me to be a better person. ___ 1
2. My spirituality is at the core of who I am. ___ 2
3. I feel a connectedness to the world around me. ___ 3
4. My spirituality is my 'inner voice' speaking to me. ___ 4
5. I believe God, Creator or Higher Power is present in my life. ___ 5
6. My spiritual beliefs are the foundation for my religious background. ___ 6
7. My spiritual beliefs make my life more meaningful. ___ 7
8. I feel as if my life has a higher purpose. ___ 8
9. My spiritual beliefs positively impact my health and well-being. ___ 9
10. My spiritual beliefs guide my relationships with other people. ___ 10
11. I would feel lost without my spiritual beliefs directing my life. ___ 11
12. I am a very spiritual person. ___ 12
13. I can be a spiritual person without being religious. ___ 13
14. The meaning of spirituality is confusing to me. ___ 14
15. I have never really experienced spirituality. ___ 15
16. I try to be a spiritual person. ___ 16
17. Every person possesses spirituality even if s/he is not aware of it. ___ 17
18. Most people think of spirituality as a religion. ___ 18
19. My spirituality has little or no effect on my life. ___ 19

20. Until I have a want or need, I tend to ignore my relationship with God, Creator or Higher Power. ___ 20
21. I sometimes lose interest when people start talking about spirituality. ___ 21
22. I believe my spirituality or spiritual essence existed before I was born. ___ 22
23. My spirituality is my personal connection with God or a Higher Power. ___ 23
24. I believe my spirituality is infinite and fully conscious without physical form. ___ 24
25. That which is my soul is my spirituality. ___ 25
26. I believe spirituality is a New-Age concept. ___ 26
27. I believe spirituality contradicts religion. ___ 27

## APPENDIX B

Internal Review Board (IRB) Letter of Acceptance [HES IRB# 003-A] for the Prospective Development and Validation of the Spirituality Scale (SS)

THE UNIVERSITY OF TENNESSEE

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October 2, 2003

HES IRB# 003-A

TITLE: The Development and Validation of an Instrument Measuring Spirituality

Linda Wyatt Nelms
753 Constitution Drive
Jefferson City, TN 37760

Faculty Advisor: Dr. Robert J. Pursley
373 HPER
Dept of Health and Exercise Science

Your project listed above was reviewed and approved as exempt research.

This approval is for a period ending one year from the date of this letter. Please make timely submission of renewal or prompt notification of project termination.

Responsibilities of the investigator during data collection for this project include the following:

1. To obtain prior approval from the Departmental Review Chair before instituting any changes in the project.
2. To maintain records in a manner that will protect the privacy of those participating in the project.
3. To submit a Form D to report changes in the project or to report termination at 12-month or less intervals.

Best wishes in your research endeavor. This office will send you a renewal notice (Form R) on the anniversary of your approval date.

Sincerely,

Dixie L. Thompson, Ph.D.
Chair – Health and Exercise Science Departmental Review Committee

CC: Brenda Lawson, UT IRB Office
Dr. Robert J. Pursley

## APPENDIX C

The Nomological Network

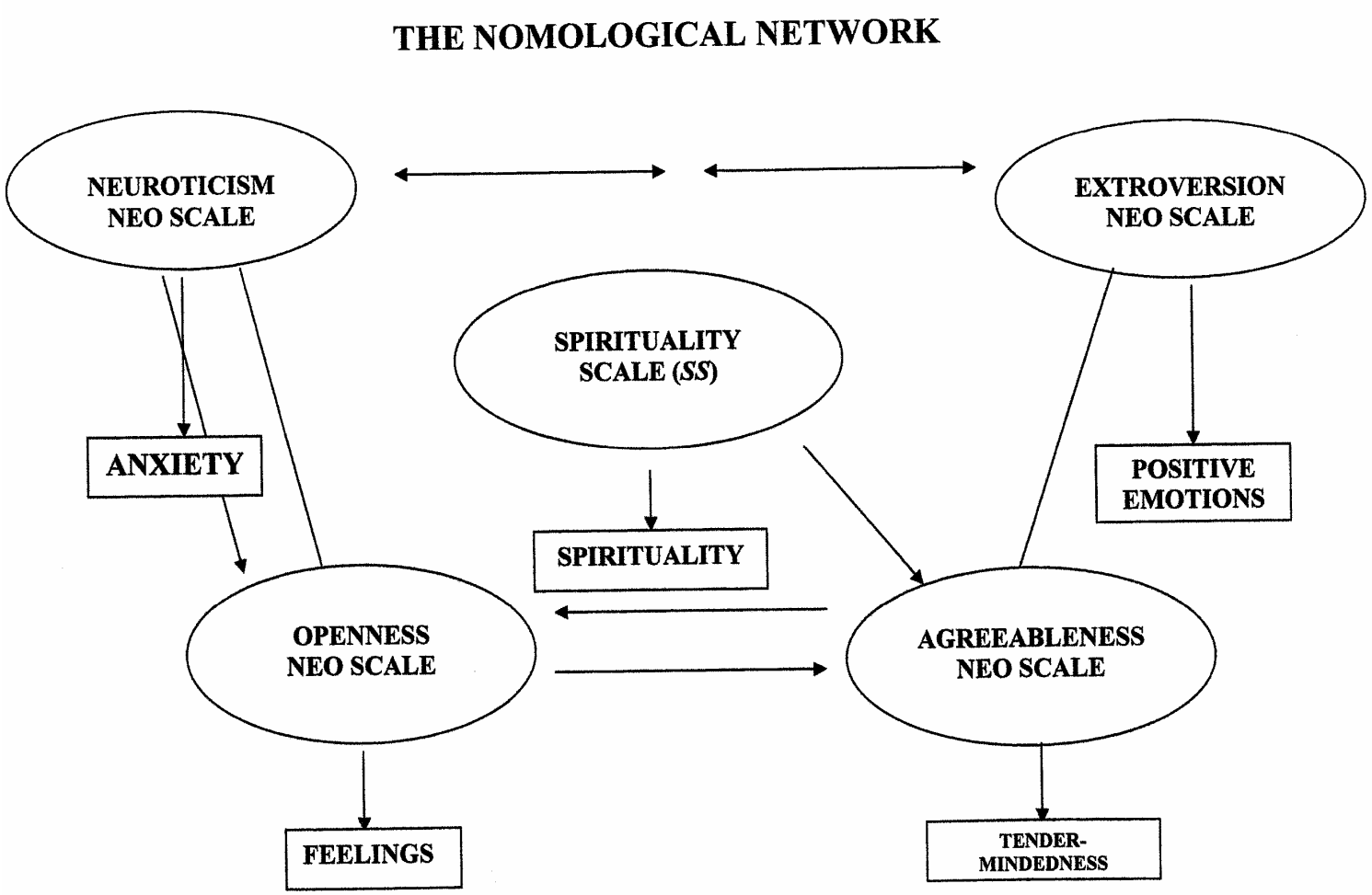



**Figure A-1. The Nomological Network**

Source: Trochim, W.M.K. (2001). *The Research Methods Knowledge Base.* (2nd ed.). Using Cronback & Meehl (1955) view of construct validity. Atomic Dog Publishing: Cincinnati, Ohio.

## APPENDIX D

43-Item Spirituality Scale (SS)
Revised Spirituality Scale *(SS)* with NEO-PI-R Constructs

This questionnaire is being conducted as part of a class requirement for Psychology 607 at the University of Tennessee. If you have any questions, please call Linda Nelms (865) 974-4215 (Campus Address: Department of Health and Exercise Science, 1914 Andy Holt Ave). Your responses will be treated as anonymous. You are under no obligation whatsoever to answer any question you do not wish to answer. Your participation in completing this instrument is voluntary.

Please pick a number from the scale to show how much you agree or disagree with each statement and write it in the space at the right of the item.

1 = Strongly Agree
2 = Agree
3 = Neutral
4 = Disagree
5 = Strongly Disagree

1. My spiritual beliefs help me to be a better person. ___ 1
2. My spirituality is at the core of who I am. ___ 2
3. I am not a worrier. (R) ___ 3
4. My spirituality is my 'inner voice' speaking to me. ___ 4
5. I believe God, Creator or Higher Power is present in my life. ___ 5
6. I have never literally jumped for joy. (R) ___ 6
7. My spiritual beliefs make my life more meaningful. ___ 7
8. I feel as if my life has a higher purpose. ___ 8
9. My spiritual beliefs positively impact my health and well-being. ___ 9
10. My spiritual beliefs guide my relationships with other people. ___ 10
11. I would feel lost without my spiritual beliefs directing my life. ___ 11
12. I am a very spiritual person. ___ 12
13. Without strong emotions, life would be uninteresting to me. ___ 13
14. I'm hard-headed and tough-minded in my attitudes. (R) ___ 14
15. I am easily frightened. ___ 15
16. I try to be a spiritual person. ___ 16
17. I have sometimes experienced intense joy or ecstasy. ___ 17
18. I rarely experience strong emotions. (R) ___ 18
19. We can never do too much for the poor and elderly. ___ 19

20. I rarely feel fearful or anxious. (R) ___ 20
21. I am not a cheerful optimist. (R) ___ 21
22. How I feel about things is important to me. ___ 22
23. My spirituality is my personal connection with God or a Higher Power. ___ 23
24. I have no sympathy for panhandlers. (R) ___ 24
25. I often feel tense and jittery. ___ 25
26. Sometimes I bubble with happiness. ___ 26
27. I seldom pay much attention to my feelings of the moment. (R) ___ 27
28. Human need should always take priority over economic considerations. ___ 28
29. I am seldom apprehensive about the future. (R) ___ 29
30. I don't consider myself especially "light-hearted". (R) ___ 30
31. I experience a wide range of emotions or feelings. ___ 31
32. I believe all human beings are worthy of respect. ___ 32
33. I often worry about things that might go wrong. ___ 33
34. I am a cheerful, high-spirited person. ___ 34
35. I seldom notice the moods and feelings that different environments produce. (R) ___ 35
36. I have sympathy for others less fortunate than me. ___ 36
37. I have fewer fears than most people. (R) ___ 37
38. I rarely use words like "fantastic!" or "sensational!" to describe my experiences. (R) ___ 38
39. I find it easy to empathize—to feel myself what others are feeling. ___ 39
40. I would rather be known as "merciful" than as "just". ___ 40
41. Frightening thoughts sometimes come into my head. ___ 41
42. I laugh easily. ___ 42
43. Odd things—like certain scents or the names of distant places—can evoke strong moods in me. ___ 43

## APPENDIX E

Internal Review Board (IRB) Letter of Acceptance [HES IRB# 007-A] for the research project entitled, "The Relationship Between Spirituality and the Health of College Students in a University Setting".

THE UNIVERSITY OF TENNESSEE

Department of Health and Exercise Science
1914 Andy Holt Avenue
Knoxville, TN 37996-2710
(865) 974-5041
FAX (865) 974-6439

April 7, 2004

HES IRB# 007-A

TITLE: The Relationship Between Spirituality and the Health of College Students in a University Setting

Linda Wyatt Nelms
753 Constitution Drive
Jefferson City, TN 37760

Dr. Robert Pursley
Dept of Health and Exercise Science
390 HPER

Your project listed above was reviewed and approved as exempt research.

This approval is for a period ending one year from the date of this letter. Please make timely submission of renewal or prompt notification of project termination.

Responsibilities of the investigator during data collection for this project include the following:

1. To obtain prior approval from the Departmental Review Chair before instituting any changes in the project.
2. To maintain records in a manner that will protect the privacy of those participating in the project.
3. To submit a Form D to report changes in the project or to report termination at 12-month or less intervals.

Best wishes in your research endeavor. This office will send you a renewal notice (Form R) on the anniversary of your approval date.

Sincerely,

Dixie L. Thompson, Ph.D.
Chair – Health and Exercise Science Departmental Review Committee

CC: Brenda Lawson, UT IRB Office
Dr. Robert Pursley

## APPENDIX F

The College Student Health Risk Appraisal (CARS ) and the Spirituality Scale (SS)
Including the Standardized Letter for Instructors

# The CARS

## *The COLLEGE STUDENT APPRAISAL of RISKS SURVEY*

**The HEALTHIER PEOPLE NETWORK, Inc.**

*... linking science, technology, and education to serve the public interest ...*

***STUDENTS PLEASE NOTE!***

⇩

**Before filling out this College Student Health Risk Appraisal questionnaire, tear off the tab with your Name, I.D., and Section Number. This will insure that the answers you give on the questionnaire will remain confidential and no one in your school will know how you responded to the specific questions. Your completed questionnaire will be mailed to:**
**The HEALTHIER PEOPLE NETWORK, Inc, Atlanta, Georgia for confidential processing and preparation of your report.**

**TURN TO PAGE 2 AND READ THE INSTRUCTIONS**

*Section Number:*

*Name:*

## HEALTH RISK APPRAISAL

**A health risk appraisal is an educational tool, showing you choices you can make to keep good health and avoid the most common causes of disease or death (for a person of your age and sex). The CARS health risk appraisal is not a substitute for a check-up or physical exam that you get from a doctor or nurse; however, it does provide some ideas for lowering your risk of getting sick or injured in the future. It is NOT designed for people who already have HEART DISEASE, CANCER, KIDNEY DISEASE, OR OTHER SERIOUS CONDITIONS; if you have any of these problems, please ask your health care provider to interpret the report you will receive for you.**

**The HEALTHIER PEOPLE NETWORK, Inc.**

*... linking science, technology, and education to serve the public interest ...*

## The CARS
## *The COLLEGE STUDENT APPRAISAL of RISKS SURVEY*

### INSTRUCTIONS

**This survey is about your health related behaviors. The information you give and the personal report you will receive will help you better understand what you can do to stay healthy.**

**The HEALTHIER PEOPLE NETWORK, Inc., an independent research office located in Atlanta, Georgia, will process all survey questionnaires.**

**By answering this survey you will allow The HEALTHIER PEOPLE NETWORK to give you a report that will show what your healthy habits are and your health risks and how they affect your health outcomes. If you have any serious health risks, a separate report will also be prepared for your school nurse or school counselor so they can help explain the results and suggest what actions you can take to improve or protect your health. Otherwise the answers you give will be kept strictly private. No one besides a school nurse or counselor will know what is in the report you will receive.**

**Completing the survey is voluntary. Whether or not you answer the questions will not affect your grade in this class. If you are not comfortable answering a question, just leave it blank.**

**The questions asking about your background will be used only to describe the types of students completing this survey.**

**Be sure to read every question. Answer the questions based on what you <u>really</u> do. To get the most accurate results, answer as many questions as you can. If you do not know the answer leave it blank. This is not a test. There are no wrong answers. When you are finished, follow the instructions of the person giving you the survey.**

***The following questions <u>must</u> be completed or the computer program cannot process your questionnaire:***

*1. SEX 2. AGE 3. HEIGHT 4. WEIGHT 15. CIGARETTE SMOKING*

***Thank you for your interest in staying healthy!***

# The HEALTHIER PEOPLE NETWORK, Inc.

*. . . linking science, technology, & education* ***to serve the public interest . . .***

# HEALTH RISK APPRAISAL

**IDENTIFICATION NUMBER**

☐☐☐☐☐☐☐☐☐

The health risk appraisal is an educational tool, showing you choices you can make to keep good health and avoid the most common causes of death (for a person of your age and sex). This health risk appraisal is **not** a substitute for a check-up or physical exam that you get from a doctor or nurse; however, it does provide some ideas for lowering your risk of getting sick or injured in the future. It is NOT designed for people who already have HEART DISEASE, CANCER, KIDNEY DISEASE, OR OTHER SERIOUS CONDITIONS; if you have any of these problems, please ask your health care provider to interpret the report for you.

**DIRECTIONS:**
To get the most accurate results, **answer as many questions as you can**. If you do not know the answer leave it blank.

***The following questions must be completed or the computer program cannot process your questionnaire:***

*1. SEX  2. AGE  3. HEIGHT  4. WEIGHT  15. CIGARETTE SMOKING*

**Please write your answers in the boxes provided.** ▶ **(Examples: ☒ or 98 )**

| | |
|---|---|
| 1. **SEX** ⇒ | 1 ☐ **Male** 2 ☐ **Female** |
| 2. **AGE** | ☐ **Years** |
| 3. **HEIGHT** (Without shoes) (No fractions) | ☐ **Feet** ☐ **Inches** |
| 4. **WEIGHT** (Without shoes) (No fractions) | ☐ Pounds |
| 5. Body frame size | 1 ☐ Small 2 ☐ Medium 3 ☐ Large |
| 6. Have you ever been told that you have diabetes (or sugar diabetes)? | 1 ☐ Yes 2 ☐ No |
| 7. Are you now taking medicine for high blood pressure? | 1 ☐ Yes 2 ☐ No |
| 8. What is your blood pressure now? | ☐ / ☐ Systolic (High Number) / Diastolic (Low Number) |
| 9. If you do **not** know the numbers, check the box that describes your blood pressure. | 1 ☐ High<br>2 ☐ Normal or Low<br>3 ☐ Don't Know |

| | |
|---|---|
| 10. What is your TOTAL cholesterol level (based on a blood test)? | ☐ mg/dl |
| 11. What is your HDL cholesterol (based on a blood test)? | ☐ mg/dl |
| 12. How many cigars do you usually smoke per day? | ☐ cigars per day |
| 13. How many pipes of tobacco do you usually smoke per day? | ☐ pipes per day |
| 14. How many times per day do you usually use smokeless tobacco? (Chewing tobacco, snuff, pouches, etc.) | ☐ times per day |
| 15. **CIGARETTE SMOKING**<br>How would you describe your cigarette smoking habits? | 1 ☐ Never smoked ▶ **Go to 18**<br>2 ☐ Used to smoke ▶ **Go to 17**<br>3 ☐ Still smoke ▶ **Go to 16** |
| 16. **STILL SMOKE**<br>How many cigarettes a day do you smoke?<br>▶ **GO TO QUESTION 18** | ☐ cigarettes per day ▶ **Go to 18** |
| 17. **USED TO SMOKE**<br>a. How many years has it been since you smoked cigarettes fairly regularly?<br>b. What was the average number of cigarettes per day that you smoked in the 2 years before you quit? | ☐ years<br>☐ cigarettes per day |
| 18. In the next 12 months, how many thousands of miles will you probably travel by each of the following?<br>(NOTE: U.S. average = 10,000 miles)<br>a. Car, truck, or van:<br>b. Motorcycle: | ☐ ,000 miles<br>☐ ,000 miles |
| 19. On a typical day, how do you USUALLY travel? (Check one only) | 1 ☐ Walk<br>2 ☐ Bicycle<br>3 ☐ Motorcycle<br>4 ☐ Sub-compact or compact car<br>5 ☐ Mid-size or full-size car<br>6 ☐ Truck or van<br>7 ☐ Bus, subway, or train<br>8 ☐ Mostly stay home |
| 20. What percent of time do you usually buckle your safety belt when driving or riding? | ☐ % |
| 21. On the average, how close to the speed limit do you usually drive? | 1 ☐ Within 5 mph of limit<br>2 ☐ 6-10 mph over limit<br>3 ☐ 11-15 mph over limit<br>4 ☐ More than 15 mph over limit |
| 22. How many times in the last month did you drive or ride when the driver had perhaps too much alcohol to drink? | ☐ times last month |
| 23. How many drinks of an alcoholic beverage do you have in a typical week?<br>✉ *MEN GO TO QUESTION 33* | (Write the number of each type of drink)<br>☐ Bottles or cans of beer<br>☐ Glasses of wine<br>☐ Wine coolers<br>☐ Mixed drinks or shots of liquor |

| | |
|---|---|
| **WOMEN ONLY**<br>24. At what age did you have your first menstrual period? | ☐ years old |
| 25. How old were you when your first child was born? | ☐ years old (If no children, write 0) |
| 26. How long has it been since your last breast x-ray (mammogram)? | 1 ☐ Less than 1 year ago<br>2 ☐ 1 year ago<br>3 ☐ 2 years ago<br>4 ☐ 3 or more years ago<br>5 ☐ Never |
| 27. How many women in your natural family (mother and sisters only) have had breast cancer? | ☐ Women |
| 28. Have you had a hysterectomy operation? | 1 ☐ Yes<br>2 ☐ No<br>3 ☐ Not sure |
| 29. How long has it been since you had a pap smear test? | 1 ☐ Less than 1 year ago<br>2 ☐ 1 year ago<br>3 ☐ 2 years ago<br>4 ☐ 3 or more years ago<br>5 ☐ Never |
| ⏩30. How often do you examine your breasts for lumps? | 1 ☐ Monthly<br>2 ☐ Once every few months<br>3 ☐ Rarely or never |
| ⏩31. About how long has it been since you had your breasts examined by a physician or nurse? | 1 ☐ Less than 1 year ago<br>2 ☐ 1 year ago<br>3 ☐ 2 years ago<br>4 ☐ 3 or more years ago<br>5 ☐ Never |
| ⏩32. About how long has it been since you had a rectal exam?<br>*WOMEN GO TO QUESTION 34* | 1 ☐ Less than 1 year ago<br>2 ☐ 1 year ago<br>3 ☐ 2 years ago<br>4 ☐ 3 or more years ago<br>5 ☐ Never |
| | |
| **MEN ONLY**<br>⏩33. About how long has it been since you had a rectal or prostate exam?<br>*MEN CONTINUE ON QUES. 34* | 1 ☐ Less than 1 year ago<br>2 ☐ 1 year ago<br>3 ☐ 2 years ago<br>4 ☐ 3 or more years ago<br>5 ☐ Never |
| | |
| ⏩34. How many times in the last year did you witness or become involved in a violent fight or attack where there was a good chance of a serious injury to someone? | 1 ☐ 4 or more times<br>2 ☐ 2 or 3 times<br>3 ☐ 1 time or never<br>4 ☐ Not sure |
| ⏩35. Considering your age, how would you describe your overall physical health? | 1 ☐ Excellent<br>2 ☐ Good<br>3 ☐ Fair<br>4 ☐ Poor |

⏩ Questions with a star symbol are not used by the computer to calculate your risks; however, answering these questions may help you plan a more healthy lifestyle.



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| | |
|---|---|
| ⏩36. In an average week, how many times do you engage in physical activity (exercise or work which lasts at least 20 minutes without stopping and which is hard enough to make you breathe heavier and your heart beat faster)? | 1 ☐ Less than 1 time per week<br>2 ☐ 1 or 2 times per week<br>3 ☐ At least 3 times per week |
| ⏩37. If you ride a motorcycle or all-terrain vehicle (ATV), what percent of the time do you wear a helmet? | 1 ☐ 75% to 100%<br>2 ☐ 25% to 74 %<br>3 ☐ Less than 25%<br>4 ☐ Does not apply to me |
| ⏩38. Do you eat some food every day that is high in fiber, such as whole grain bread, cereal, fresh fruits or vegetables? | 1 ☐ Yes 2 ☐ No |
| ⏩39. Do you eat foods every day that are high in cholesterol or fat, such as fatty meat, cheese, fried foods, or eggs? | 1 ☐ Yes 2 ☐ No |
| ⏩40. In general, how satisfied are you with your life? | 1 ☐ Mostly satisfied<br>2 ☐ Partly satisfied<br>3 ☐ Not satisfied |
| ⏩41. Have you suffered a personal loss or misfortune in the past year that had a serious impact on your life? (For example, a job loss, disability, separation, jail term, or the death of someone close to you.) | 1 ☐ Yes, 1 serious loss or misfortune<br>2 ☐ Yes, 2 or more<br>3 ☐ No |
| ⏩42a. Race | 1 ☐ Aleutian, Alaska native, Eskimo or American Indian<br>2 ☐ Asian<br>3 ☐ Black<br>4 ☐ Pacific Islander<br>5 ☐ White<br>6 ☐ Other<br>7 ☐ Don't know |
| ⏩42b. Are you of Hispanic origin, such as Mexican-American, Puerto Rican, or Cuban? | 1 ☐ Yes 2 ☐ No |
| ⏩43. What is the highest grade you completed in school? | 1 ☐ Grade school or less<br>2 ☐ Some high school<br>3 ☐ High school graduate<br>4 ☐ Some college<br>5 ☐ College graduate<br>6 ☐ Post graduate or professional degree |

Name _____

Address _____

City _____ State ___ ___ Zip ___ ___ ___ ___ ___

(Note: Name and address are optional, depending on how your report will be returned to you. If you wish to remain anonymous, copy your Identification Number onto a receipt form. You can then use this receipt to claim your computerized report.)

# *Spirituality Scale (SS)*

**This scale is strictly confidential. You are under no obligation whatsoever to answer any question you do not wish to answer. Your participation in completing this instrument is voluntary.**

**Part I. Please mark your answers with a check mark [✓] in the boxes at the right of the item. Answer every question, but give only one answer per question.**

| | |
|---|---|
| **1. My spiritual beliefs help me to be a better person.** | 1 ☐ Strongly Disagree<br>2 ☐ Disagree<br>3 ☐ Neutral<br>4 ☐ Agree<br>5 ☐ Strongly Agree |
| **2. My spirituality is at the core of who I am.** | 1 ☐ Strongly Disagree<br>2 ☐ Disagree<br>3 ☐ Neutral<br>4 ☐ Agree<br>5 ☐ Strongly Agree |
| **3. My spirituality is my 'inner voice' speaking to me.** | 1 ☐ Strongly Disagree<br>2 ☐ Disagree<br>3 ☐ Neutral<br>4 ☐ Agree<br>5 ☐ Strongly Agree |
| **4. I believe God, Creator or Higher Power is present in my life.** | 1 ☐ Strongly Disagree<br>2 ☐ Disagree<br>3 ☐ Neutral<br>4 ☐ Agree<br>5 ☐ Strongly Agree |
| **5. My spiritual beliefs are the foundation for my religious background.** | 1 ☐ Strongly Disagree<br>2 ☐ Disagree<br>3 ☐ Neutral<br>4 ☐ Agree<br>5 ☐ Strongly Agree |
| **6. My spiritual beliefs make my life more meaningful.** | 1 ☐ Strongly Disagree<br>2 ☐ Disagree<br>3 ☐ Neutral<br>4 ☐ Agree<br>5 ☐ Strongly Agree |
| **7. I feel as if my life has a higher purpose.** | 1 ☐ Strongly Disagree<br>2 ☐ Disagree<br>3 ☐ Neutral<br>4 ☐ Agree<br>5 ☐ Strongly Agree |
| **8. My spiritual beliefs positively impact my health and well-being.** | 1 ☐ Strongly Disagree<br>2 ☐ Disagree<br>3 ☐ Neutral<br>4 ☐ Agree<br>5 ☐ Strongly Agree |
| **9. My spiritual beliefs guide my relationships with other people.** | 1 ☐ Strongly Disagree<br>2 ☐ Disagree<br>3 ☐ Neutral<br>4 ☐ Agree<br>5 ☐ Strongly Agree |

| Please mark your answers with a check mark [✓] in the boxes at the right of the item. Answer every question, but give only one answer per question. | |
|---|---|
| **10. I would feel lost without my spiritual beliefs directing my life.** | 1 ☐ Strongly Disagree<br>2 ☐ Disagree<br>3 ☐ Neutral<br>4 ☐ Agree<br>5 ☐ Strongly Agree |
| **11. I am a very spiritual person.** | 1 ☐ Strongly Disagree<br>2 ☐ Disagree<br>3 ☐ Neutral<br>4 ☐ Agree<br>5 ☐ Strongly Agree |
| **12. I try to be a spiritual person.** | 1 ☐ Strongly Disagree<br>2 ☐ Disagree<br>3 ☐ Neutral<br>4 ☐ Agree<br>5 ☐ Strongly Agree |
| **13. My spirituality is my personal connection with God or a Higher Power.** | 1 ☐ Strongly Disagree<br>2 ☐ Disagree<br>3 ☐ Neutral<br>4 ☐ Agree<br>5 ☐ Strongly Agree |
| **Part II. Please mark your answers with a check mark [ ✓ ] in the boxes. Answer every question, but give only one answer per question.** | |
| **D1 When attending classes, where do you live?** | 1 ☐ At home (with parents)<br>2 ☐ In a dormitory<br>3 ☐ In a fraternity or sorority house<br>4 ☐ With my spouse and/or children<br>5 ☐ Alone in an apartment/rented house<br>6 ☐ With others – in an apartment or rented house<br>7 ☐ Other |
| **D2. What class/academic level are you in now?** | 1 ☐ Freshman<br>2 ☐ Sophomore<br>3 ☐ Junior<br>4 ☐ Senior<br>5 ☐ Graduate studies<br>6 ☐ Other |
| **D3. What is the level of education of your mother?** | 1 ☐ Less than high school graduate<br>2 ☐ High school graduate<br>3 ☐ Some college<br>4 ☐ College degree |
| **D4. Which of the following best describes your current health status?** | 1 ☐ Poor<br>2 ☐ Fair<br>3 ☐ Good<br>4 ☐ Excellent |

***Thank you for participating!***

**Standard Remarks for**

**The Health Risks Appraisal for College Students (CARS)**

Good Morning/Afternoon:

With the cooperation of The Healthier People Network, Inc., I am conducting a totally confidential class project to identify health related behaviors of students here at UTK. Completing the questionnaire is one hundred percent voluntary. Whether or not you answer the questions will not affect your grade. So, what is in the project for you?

The information you provide will serve as a basis for an individualized report that will show what your healthy habits and your health risks are. Your answers and your report will be kept strictly private. If for any reason you are not comfortable answering a question, leave it blank.

An ID coupon is stapled to your questionnaire. Remove it and keep it so that you can receive your personal report. No one (instructor or other) will know the identification of your questionnaire. Do not complete the first item (Identification) of the booklet. Your personal ID, which only you have, is matched with a bar code on your questionnaire. Again, this is only to make sure you receive your personal health report.

Be sure to answer each question based on what you really do. To receive the most accurate results, answer as many questions as you can. If you do not know the answer, leave it blank. This is not a test. There are no wrong answers. When you are finished, please turn the booklet into your instructor. Remember to remove and keep your personal ID coupon from your questionnaire. Thank you.

## VITA

Linda Wyatt Nelms was born in Morristown, TN. She graduated from Morristown Hamblen High School East in 1971. In 1972, she married John Philip Nelms and had two children, Summer Nicole and Christian Wyatt. She received a Bachelor of Science in 1989 from Tusculum College in Greenville, TN. Linda received a Master of Public Health from The University of Tennessee in 2002.