RELATIONSHIPS BETWEEN SPIRITUALITY AND WELLNESS AMONG PROSPECTIVE PHYSICIANS

A DISSERTATION

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BY

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Date

To the Associate Vice President for Research and Dean of the Graduate School:

I am submitting herewith a dissertation written by Astley C. Ancona, entitiled "Relationships Between Spirituality and Wellness Among Prospective Physicians." I have examined this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Health Education.

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To protect individuals we have covered their signatures.

Dedication

This work is dedicated to my parents, A. Cooper and Harriet W. Ancona, who were first to instill and spark a fascination with knowledge and teaching, and to Marsha, Allison, Lauren, and Molly, whose love, support, and understanding made it possible.

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Dr. Michael Smith was invaluable in helping organize and implement the study and then cajoled and gently pressured me into completing the paper. I would like to acknowledge and thank the Department of Health Studies faculty, for their leadership and influence and for the many students that were willing to share class, thoughts, dreams and ideals. I must thank Dr. Susan Ward, one of the brightest and classiest women I've known, for her love of teaching, her patience, and for many, memorable, runs. I am most thankful that Dr. Eva Doyle, whom I count as friend, colleague, and mentor, with her gentle, deeply spiritual nature, helped guide me through the entire process. Without that guidance this study and the degree would never have gotten past the "this is an interesting idea" stage.

I am blessed to have three beautiful, intelligent daughters, and a dedicated, wonderful spouse, who have all sacrificed and gone to statistically significant effort to help make this paper and degree happen. They have been understanding and accepting of the many nights at the library, of untold numbers of household duties and chores that went unattended, and at times without the focused attention and presence of a dad and husband. I would also like to highlight the importance of spiritual health in all our lives, that for me personally, has been reaffirmed during this study.

ABSTRACT

COMPLETED RESEARCH IN HEALTH SCIENCES
Texas Woman's University, Denton, Texas

Ancona, A. C. Relationships Between Spirituality and Wellness Among Prospective Physicians. Ph. D. in Health Education, 2000, 72 pp. (E. Doyle).

The purpose of this study was to investigate the relationship between spirituality and wellness in a population of prospective physicians. The subjects were first (n = 47) and second (n = 30) year medical students at a north Texas medical school. Each subject completed the Spiritual Involvement and Beliefs Scale (SIBS, r = .92 and Cronbach's Alpha = .92) and the Duke Health Profile (the Duke, r = .78). A statistically significant correlation between wellness and spirituality was detected in the second year group (p = .006), but not in the first year group of prospective physicians (See Tables 2, and 5). Current research suggests that a relationship clearly exists between spiritual health and an individual's wellness. This investigation emphasized spiritual health and its relationship to individual wellness for this population group. In this paper, the reader will find an extensive reference list, a review of the literature, a description of the study, a statistical summary, and a description of a recommended direction for future research. In the field of health education and health promotion it is evident that spirituality, as an integral part of wellness and an area of growing interest, must be investigated and more thoroughly explored.

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CHAPTER I: INTRODUCTION

Growing public interest in the spiritual dimensions of health has been reflected in the amount of press coverage in the United States (Ellison & Levin, 1998). Since 1994, nearly 1,400 newspaper articles and more than 300 jounal articles on spirituality have been published in some of the largest and most reputable magazines in the country (NIHR, 1999). Many prominent mental health professionals of the twentieth century believe that religion and spirituality are the same, and both have either a negative or no influence on mental health (Koenig, 1997). Religious patients were viewed as irrational, even mentally disturbed. Primary care physicians have been less hostile, but have not been particularly supportive of including spirituality or religion as a component of clinical care (Koenig,1997). However, recent research has suggested that spiritual commitment may help prevent many clinical problems including depression, substance abuse, physical illness, and early mortality (Matthews, McCullough, Larson, Koenig, Swyers, & Milano, 1998).

The results of a number of current studies offer strong support for the need to explore spirituality and its infusion into a more holistic approach to health care. In psychiatry residency programs training in religious and spiritual issues, is now required by the Accreditation Council for Graduate Medical Education (Lukhoff, Provenzano, Lu, & Turner, 1999). Courses on spirituality and healing are being offered at a number of prestigious medical schools and future physicians are learning to become more compassionate and how to talk with patients about religious and spiritual issues.

Interestingly, the increasing acceptance of spiritual and religious issues by patients and health care professionals is not yet reflected in the current literature (Lukhoff, et al, 1999). A number of highly respected figures in the health care field are asserting that it is time for spiritual and religious issues to be taken seriously (Dillard & Ziporyn, 1998).

More research is needed in health care settings that examines the relationship between spirituality and wellness (Hatch, Burg, Naberhaus, Hellmich, 1998). One aspect of these research efforts should be the exploration of possible spirituality and wellness associations in the personal lives of physicians. Spirituality and wellness in a physician's personal life can relate to and involve the physician's personal wellness, which impacts the physician-patient relationship, and the practice of medicine (Olive, 1995).

Veninga (1997) recommended a number of strategies for effectively handling the stress of being a physician. These recommendations include: building leisure into life's journey, developing an optimistic attitude, spending time with friends, using time management techniques, and continuing to grow professionally. In a recent study of primary care physicians, Xu, Veloski, Hojat, and Fields (1999) report that the most significant difference between physicians planning to leave and those remaining in their chosen fields of primary care were personal values and the influence of their faith. Researchers have begun investigating the correlation between spiritual well-being and health (Ellis, Vinson & Ewigman, 1999). Yet, research that examines physicians' personal perceptions about spirituality and wellness is in its introductory stage. One component of an exploration into the complex relationship between spirituality and

wellness and their potential impact on health care is to first examine the personal spirituality and wellness relationships among prospective physicians.

Purpose of the Study

The purpose of this study was to investigate the relationship between spirituality and personal wellness levels among prospective physicians enrolled in a north central Texas medical school.

Hypotheses

The hypotheses in this study were stated in the null and tested at a .05 level of significance. The hypotheses were:

1. The four indices of the Spirituality Inventory and Beliefs Scale (SIBS) will not predict positive wellness measured by the Duke Health Profile.
2. The four indices of the Spirituality Inventory and Beliefs Scale (SIBS) will not predict negative wellness measured by the Duke Health Profile.

Definition of Terms

The following terms were defined for the purpose of this study:

1. Wellness - the integration of social, mental, emotional, spiritual, and physical health at any level of health (Eberst, 1984).
2. Prospective Physicians - Graduate students in their first four years of training at an accredited medical school.
3. Religion or Religiousness - "religiousness descriptions include personal beliefs, such as a belief in God or a higher power, organizational or institutional beliefs and

practices such as church membership and attendance" (Zinnbauer, Pargament, Cole, Rye, Butter, Belavich, Hipp, Scott, & Kadar, 1997, p. 461). Formal structure, prescribed theology, and rituals are also included (Zinnbauer, et al., 1997).

4. Spirituality – "refers to such matters as beliefs, personal or inner faith, and personal interaction with God" (p. 461). Personal transcendence, elevated consciousness, sensitivity and meaningfulness are included (Zinnbauer, et al., 1997).
5. Positive Wellness Indicators – The Duke Health Profile contains six indicators that are described as positive indicators of health. The positive indicators are: physical, mental, social, perceived health, self-esteem, and general health.
6. Negative Wellness Indicators – The Duke Health Profile contains four indicators that are described as negative indicators of health. The negative indicators are: anxiety, depression, pain, and disability.
7. Spiritual Indices - The Spirituality Involvement and Beliefs Scale measures four components of spirituality (Hatch, et al., 1998). These indices are:

    a) Factor 1: External/Ritual Index of Spirituality – measures spiritual activities/rituals that are consistent with belief in an external power.

    b) Factor 2: Internal/Fluid Index of Spirituality - measures evolving beliefs and focuses on internal beliefs and growth.

    c) Factor 3: Existential/Meditative Index of Spirituality – measures the practice of meditation and beliefs about existential issues.

d) Factor 4: Humility Personal Application Index of Spirituality - measures and includes feelings about personal humility and the daily application of spiritual principles (p. 481).

Delimitations

The delimitations for this study included age, gender, socioeconomic status, intellectual capability or IQ, and ethnicity. The percentage of females in these two classes (45%) was quite similar to that of the total medical student population in the U. S. (42.6%) (American Association of Medical Colleges, 1997-1998).

Limitations

The study was limited to first and second year prospective physicians enrolled in a north central Texas medical school. Therefore, the generalizability of the investigation was impacted.

Assumptions

The following were assumptions made during study implementation: 1) spirituality is complex, but can be measured, 2) wellness is multidimensional and can also be measured, 3) spirituality is an important part of wellness for prospective physicians, 4) many prospective physicians enter the profession of medicine to help people and may have a more significant spiritual dimension to their lives, 5) the spirituality and wellness levels of prospective physicians is reflective of physicians in general, 6) the spirituality levels of those who choose to participate will be similar to those who choose not to participate (Vanderpool & Levin, 1990).

Background and Significance

There have been many studies involving the significance of spirituality and health. The National Institute of Healthcare Research (NIHR, 1999) has been involved in many of these studies. NIHR (1999) researchers report that spiritual beliefs and practices can predict improvement in physical functioning, compliance to medical regimens, level of self-esteem, and diminished anxiety and health worries in patients that had invasive surgical procedures. A NIHR (1999) study also describes that persons reporting higher levels of spirituality perceive their health to be better than those with no spiritual affiliation and use fewer health care resources such as the emergency department, walk in clinics, doctor and dentist visits, and spend fewer days in the hospital. Another NIHR (1998) study determined that the greatest differences in health and wellness were found between those patients that reported no or low levels and those with moderate to high levels of spirituality (NIHR, 1999).

Levin (1998) reviewed 27 studies that included a religious or spiritual variable and determined that 22 reported a positive health effect from high spirituality. Additionally, four other studies had positive results, but were statistically insignificant. Dossey (1993) relates in Healing Words, that investigators examined the literature in the field of psychiatry for spiritual involvement and participation as it related to mental health. It was determined that 92 % of the studies showed spirituality to be a positive influence for mental health, 4 % neutral, and 4 % harmful. In another similar study of

family medicine literature highlighting physical health and spirituality, 83 % showed a positive benefit and the remaining 17 %, a neutral effect.

Studies that have investigated the spiritual dimension of health and medicine are also numerous. Three studies have occurred over the past few years and developed into landmark research projects in the field of health promotion and spirituality. These include the Lifestyle Heart Trial (Ornish, et al, 1990), the Psychologic Intervention in Cancer Treatment (Seigel, et al., 1993), and the Stress Reduction Clinic Study (Kabat-Zinn, et al., 1990). These studies will be addressed in greater detail in a later section of this paper.

There have been few studies that have investigated the spiritual segment of a physician's life, how it relates to personal wellness, and its effect on their practice of medicine. In a recent study that investigated family practice residents, Saba (1997) detected that physicians must recognize that how they view themselves as medical professionals positively effects their practice of medicine. Saba further observes that, with medicine's prevalent, ever-changing environment, checking individual and collective bearings can help remind physicians what is unique and meaningful about their profession and work. Medical students are characteristically a heavily studied group; yet, there are very few studies that examine this aspect of their lives and how it will apply to their medical career.

Seaward (1995) reports that spiritual well-being has, at best, been given tacit acknowledgment in health promotion programming and, at worst, has been completely

ignored. Seaward maintains that despite an overt absence in health promotion, spirituality has enjoyed a recent renaissance and a greater public comfort. Professionals in the worksite health promotion field report that clients are seeking more than aerobic classes, cholesterol screenings, and weight loss programs to improve their health status (Seaward, 1995). Health education/health promotion professionals must have the foresight and vision to address issues in the profession related to spirituality and wellness.

CHAPTER II: REVIEW OF LITERATURE

This chapter provides an overview of the research literature as it pertains to spirituality and wellness in health care. Specific topics include those related to health and wellness, spirituality, and religiousness.

Health and Wellness

Eberst (1985) states that health and illness are multidimensional; when one component of either is affected, all components are affected. Chapman (1987) defines wellness as a journey, not a destination. Chapman continues that, "Wellness is an intentional choice of a lifestyle characterized by personal responsibility, balance and maximum enhancement of physical, mental and spiritual health" (p. 14).

The World Health Organization provides this much quoted and widely criticized definition of health, "health is a state of complete physical, mental, and social well-being, and not just the absence of disease" (1946). Health promotion comprises efforts to enhance positive health and reduce the risk of ill health, through the overlapping spheres of health education, prevention, and health protection. Although risk reduction has been particularly successful over the past decade, half of all deaths in the U. S. are attributed to preventable risk factors (DHEW Publication, 1992). Chapman (1987) asserts, that ideally, the pursuit of wellness should assist in a person's quest of values for living.

Spirituality and Religiousness

Spirituality is described in personal or experiential terms such as belief in God or a higher power, or having a relationship with God or a higher power, and is characterized as "personal and subjective" (Zinnbauer, et al., 1997). Religiousness and spirituality appear to describe different concepts; yet, are not totally independent. Spirituality offers an ethical path to personal fulfillment. Religiousness is associated with higher levels of authoritarianism, religious orthodoxy, intrinsic religion, parental attendance, self-righteousness, and church attendance. Religiousness is also characterized as "narrow and institutional" (Zinnbauer, et al., 1997).

Researchers Levin and Chatters (1998) assert that spiritual factors may have stronger effects on psychological well-being than had been previously accepted. This particular investigation included an analysis of 12 studies that found that older persons involved in organized religious or spiritual activity had a stronger sense of life satisfaction. The researchers believe that faith promotes a sense of well-being by emphasizing relationships, stressing forgiveness, providing hope for change, a sense of meaning in life, a belief in a life after death, and a connection to God or a higher spiritual being. The components previously listed all relate to personal wellness through a significant spiritual dimension.

Psychiatrist M. Scott Peck (1978), in his famous book, The Road Less Traveled, stated that, among different peoples, there exists an extraordinary variability in the

breadth and sophistication of understanding about life. This understanding constitutes our religious or spiritual nature. Spiritually–evolved people, by virtue of their discipline, mastery and love, are people of extraordinary competence.

Scandurra (1999) states that the impact of spiritual health on an individual's overall well-being needs to be fully understood. He introduced the Integrated Wellness Model to establish the relationship between spirituality and each of the wellness dimensions (physical, emotional, social, intellectual, occupational, and spiritual). Spirituality acts as the transformational process through which all experiences are integrated into a person's life and must be included in the profession programmatically. Hawks, et al., (1995) suggest that human wellness can only be accomplished when harmony and balance in the various dimensions of health have been achieved. Total health and wellness may be equally as dependent on emotional and spiritual health, as on proper nutrition, exercise, and managing stress. Because enhanced spiritual health is associated with a variety of improvements among the ill, it may also be useful as an important approach for enhancing wellness and preventing disease in a "healthy" population.

Spirituality and its relationship to wellness is one of the current topics of great interest in the field. There is a definite need for additional research in this important area of spirituality and its impact on human health. Yet, Hawks, et al, (1995) report that little progress has been made to develop and integrate spiritual health into the health education/health promotion discipline. Chapman (1987) lists over 20 ways in which

terms in spirituality such as interconnectiveness, mindfulness, spiritual awareness activities, everyday spirituality, meditation, a state of flow, peak experiences, and journaling, are expected to become more common in the health education literature.

Chapman (1987) authored this definition of spiritual health from a health education/health promotion perspective.

> Optimal spiritual health is defined as the ability to develop one's spiritual nature to its fullest potential. This includes our ability: to discover, articulate and act on our own basic purpose in life; to learn how to give and receive love, joy and peace; to pursue a fulfilling life; and to contribute to the improvement of the spiritual health of others (p. 17).

In Richard J. Foster's Celebration of Discipline, D. Elton Trueblood writes, "the greatest problems of our time are not technological in nature, we handle those well. The most significant problems are not political or economic in nature because they are largely derivative. The greatest of our problems are moral and spiritual. This is how advanced cultures have declined in the past" (p. xi).

Religion is exercised in a number of different ways in current American society. Chatters, Levin and Ellison (1998) report that religious identity just like race, ethnicity, nationality and social class, is an influence in morbidity and mortality. Medical researchers, dating back to the past century have investigated epidemiological data as it has related to spiritual and religious variables. Religious individuals, symbols, and values have played significant roles in a number of political and social movements in the United States. Concluding that religion is not a significant influence in American culture is simply not accurate.

United States. Concluding that religion is not a significant influence in American culture is simply not accurate.

Ferraro and Albrecht-Jensen (1991) report that, among social scientists, Freud and Marx both had negative opinions concerning religion and spirituality; Freud even describing it as reflective of neurosis. On the positive side, Jung and Sorokin, describe spirituality and religion as beneficial to personal well-being and social life. Regardless of religious affiliation or intensity of belief, higher levels of practice are related to better, self-reported health status. Practice is defined as individuals who pray and participate more actively in their religions; these individuals have better health.

Harvard cardiologist, Herbert Benson, (1997) proposes that the most profound belief people can have is in a higher power. Benson also notes that most all of the world's major religions feature prayer rituals resembling meditation. Thomason and Brody (1999) remind us that it is necessary to recognize the spiritual dimension of health for all persons and not to limit it to those expressing their spirituality in the language and symbolism of religion.

Any discussion of spirituality should include the belief that a relationship with God, as God is defined, is a basic human desire, as evidenced by this Old Testament quote, "As a heart longs for flowing streams, so longs my soul for thee, O God. My soul thirsts for God, for the Living God" (Psalms 42:1, 2). Foster (1998) asserts that we need the courage to move beyond the bias and prejudice of our age and affirm with our best scientists that more than the material world exists. In intellectual honesty, we should be

willing to study and explore the spiritual life with the rigor and determination given to any field of research.

Braverman (1987) reports the emotional and physical benefits derived from the animal-human bond (pets) are well documented. Braverman believes it is now time to recognize, as well, the benefits of the divine–human bond. He defines this term as the human relationship with the spiritual, divine, Supreme Being, or Higher Power. Braverman states that the divine–human bond needs to be recognized as at least as valuable as the placebo effect. The New Testament reports in the book of Matthew that "all disease is in some way lost or distorted love or faith" (Matthew 9:5-22). This is an ancient, but interesting concept; that faith has a causal relationship with illness or disease.

Dr. Sammuel M. Shoemaker, a theologian, responded to a question about doubters of the spiritual dimension of life. Shoemaker advised, "act as if the whole thing, the Gospel, the Good News, and the reality of God – act as if it were all true. Never mind that you have doubts and that you feel it's all too good to be true. Act as if it were so. This isn't self-deception; it's a spiritual experiment that may well have verifiable results" (Gordon, 1978, p. 107). This underscores the importance of possessing some spiritual influence or belief, so there is an opportunity for these influences to become an integral part of a person's life.

Spirituality, Wellness, and Healing

Most current definitions of health and wellness include a spiritual dimension. Green and Ottoson (1994) state that spiritual health enhances wellness when it includes:

(a) a personal belief or faith that extends beyond one's self and provides a sense of belonging, (b) a locus of control and empowerment for self-realization, (c) a system of unconditional meaningfulness that provides a personal sense of positive direction and fulfillment, and (d) peace and tranquility in the face of stressful situations" (p. 8).

Spirituality, according to Scandurra (1999), can be defined in terms of one's connections to self, others, nature, the divine, and experiences in every day life. It is considered to be the integrative and interconnective dimension that is fundamental to overall wellness. It is the "fundamental life process through which wellness is experienced....the physical, emotional, social, occupational, and intellectual aspects of wellness operate within the spiritual dimension..." (p. 105). Thus, spirituality acts as the transformational process through which all experiences are integrated into a person's life.

Even though a growing body of medical literature suggests that spirituality is beneficial to the practice of medicine, scientific investigation to assess spirituality and well-being is still in its infancy (Mckee & Chapell, 1992). However, preliminary studies indicate that spiritual commitment may help prevent many clinical problems including depression, substance abuse, physical illness, and early mortality (Matthews, McCullough, Larson, Koenig, Swyers, & Milano, 1998). A Gallup Poll (1990) of families and patients revealed that 80% believe that their religious and spiritual beliefs help in coping with illness. Koenig, Pargament, and Nielson (1998) found that older patients that depend on spirituality for support experience lower rates of depression, have higher self esteem, and may live longer. Pressman, Lyons, Larson, and Strain (1990)

reported that hip replacement surgery patients who identified themselves as having strong spiritual beliefs and practices experienced less depression and could walk greater distances when discharged from the hospital than patients with lower levels of spiritual commitment.

Mehl-Madrano (1997) reported a pharmaceutical study in which a new antidepressant medication was tested. In the clinical trials for the new medication, 50% of patients taking a placebo, improved. The physicians were puzzled when fully half of the patients in the control group improved with "mere" faith in the placebo treatment. This was a curious occurrence for the physicians, because they were focusing on the effectiveness of the medication and had forgotten the power of the placebo effect.

Hawks, et al., (1995) reported on three spirituality-based programs in an article in the Journal of Health Promotion. These programs are considered to be models for enhancing spiritual health. These programs may not sound revolutionary, but they represent a radical departure from the external, fear-based, risk reduction motivation used in the past and replaces it with an internal, spiritual-based, lifestyle changing, encouraging influence. They are the Lifestyle Heart Trial, (Ornish, 1990), the Psychologic Intervention in Cancer Treatment (Spiegel, 1989), and the Stress Reduction Clinic (Kabat-Zinn, 1982).

The Lifestyle Heart Trial (Ornish, 1990) involved dividing medically documented coronary artery disease patients, randomly into treatment and usual-care control groups. The treatment group received, in addition to the traditional medications, surgery options,

cardiac rehabilitation programs, and standard dietary and exercise recommendations, a low-fat vegetarian diet, stress management training, and moderate exercise. The treatment group, at a 1-year follow up, showed significant regression in occluded arteries and a reduction in blood cholesterol levels, blood pressure, body weight, and angina. The study's major premise, rather than emphasize a biomedical approach of treating coronary heart disease with surgery and aggressive drug therapy, or both, the lifestyle heart trial attempted to address the lifestyle links in the disease chain.

The stress management segment of this study had an intentional and significant, emotional and spiritual well-being component, that included forgiveness, imagery, group support, connectedness, and altruism. This program represented an internal, spiritual-based motivation for helping participants choose and maintain healthier lifestyles. The data from this study helped develop and shape the philosophy of the lead researcher, Dr. Dean Ornish, who believes that a lack of emotional and spiritual health is the most elemental cause of heart disease, because it influences the development of negative health behaviors.

The Psychologic Intervention in Cancer Treatment (Spiegel, 1988) involved metastatic breast cancer patients at Stanford University conducted by Spiegel and colleagues. Patients were randomly assigned to a traditional care or treatment group. The experimental intervention consisted of weekly 90 minute consultations that included support group therapy and self-hypnosis. The focus of the program was on living life as fully as possible. Many of the sessions involved spiritual health components - mutual

support, coping with death, developing a life project, improving social networks, doctor-patients difficulties, enhancing family support, and pain control (Spiegel, 1988). Analysis of the data (death certificates) from this 10-year study indicated that the treatment group lived almost twice as long as the control group; 37 versus 19 months. Pain control, anxiety levels, depression, fatigue, confusion, loss of energy or vigor, all improved in the treatment group.

Researchers did not initially state increasing spiritual health as a project goal, yet this is what appears to have occurred (Spiegel, 1988). Research in various parts of the country, involving cancer patients, encourages the concept of support group therapy as an addition to traditional cancer treatment, which may indeed reflect use of a spiritual dimension.

The Stress Reduction Clinic Study, with Dr. Jon Kabat-Zinn (1982) as the lead investigator, involved patients at the University of Massachusetts Medical Center who were experiencing a variety of illnesses. These illnesses included: chronic pain, insomnia, cancer, hypertension, stress and others, none of which had responded fully to traditional treatment. The primary treatment focus of the clinic was group-based mindfulness, meditation that includes formal meditation and yoga, also informal walking, meditation and mindfulness techniques. Participants were encouraged to avoid a goal orientation, and instead, adopt an attitude of commitment to the program. Attitudes of acceptance and nonjudgment assisted the participants in finding internally based healing. They became better able to control fear, pain, insomnia, or stress, and learn to respond more

appropriately to physical and emotional cues. As in other studies, enhancing the emotional or spiritual health of the participants was not a primary program objective of the researchers (Kabat-Zinn, 1982). Rearranging priorities to find new meaning and purpose in life, finding greater connectedness with others, and with self were familiar spiritual health components.

The most celebrated 20th century prayer study was published in 1988 by Dr. Rudolph Byrd, a staff cardiologist at the University of California, San Francisco School of Medicine. Three hundred ninety-three coronary care patients at San Francisco General were divided randomly into two groups; a control group which received traditional medical treatment options and an experimental group which additionally received intercessory prayer. This was a double blind study, meaning that none of the doctors, patients or nurses knew who was receiving prayer (Byrd, 1988). There were fewer deaths, less advanced medical support, and less medication necessary in the experimental prayer group.

Oman and Reed (1998) studied mortality rates in the elderly population. Their study concluded that religious attendance provides a "persistent protective effect" against mortality. The study supported data from earlier studies that investigated different population groups. Harvard Medical School's Dr. Herbert Benson, of Relaxation Response fame, has moved beyond simple meditation to being a proponent of spirituality and prayer. Several studies he has conducted have convinced him of its effectiveness as a tool for better health. In a five year study of patients using meditation to battle chronic

illnesses, Benson found that those patients that claimed to feel the intimate presence of a higher power had better health and more rapid recoveries. Prayer, Benson believes, operates along the same biochemical pathways as the relaxation response. Praying affects epinephrine levels and other corticosteroid messengers or "stress hormones", leading to lower blood pressure, more relaxed heart and respiration rates, among other benefits (Roush, 1997).

Weil (1997) reports in his book, Eight Weeks to Optimum Health, that it is possible to lead a spiritual life and explore the influence of spirituality on health whether or not a person is religious. Weil admits that one of his major disappointments as a physician, was in meeting so few individuals who see the whole picture of health; that understand the importance of the physical, the mental, and the spiritual.

Recent research concludes that psychiatrists, perhaps one of the most spiritually skeptical specialty groups, no longer dismiss the importance of spirituality and faith in recovery from mental illness and the healing power of forgiveness (Marwick, 1996). There is recognition of the connection between prayer and healing. A strong faith can have a profound effect on lifestyles and outlook in terms of health.

Dossey (1996) reports more than 130 controlled laboratory studies show that prayer or a prayer - like state of compassion, empathy, and love, can bring about changes in living organisms from human beings to bacteria. Hope heals and faith helps mobilize a person's defenses and assists a patient in getting well, and that optimism leads to better health and medical outcomes (Dossey, 1997). Koenig, Pargament, and Nielson (1998)

found that older patients that depend on spirituality for support, experience lower rates of depression, have higher self esteem, and may live longer.

Alternative or complementary medical treatments and therapies are often used in conjunction with traditional measures (Dossey,1996). For most people, no choice exists between prayer and medicine. When serious illness occurs, both are applied. After sitting on the sidelines for most of a century, spirituality and, specifically, prayer is becoming more acceptable in modern medicine. Prayer can be considered a form of the placebo effect because there is no specific medical or physiological intervention. Placebo effects are results that can be attributed to belief, expectation, suggestion or positive thinking. The hope associated with prayer heals, because faith helps mobilize a person's defenses and assists a patient in getting well. That optimism leads to better health and medical outcomes. The reverse is also true. Hopelessness kills and negative beliefs and a sense of overwhelming futility can negatively effect health and mortality (Dossey, 1996).

Dossey tells of an old story involving a battle at sea which gives a good illustration of prayer and action. Following the battle, it seems that two sailors were floundering in the sea when one was heard to be praying loudly, and yet was drowning. His shipmate encouraged him saying, "Pray yes, but also move your arms and swim" (p.188).

Spirituality and Health Care

Braverman (1987), as both physician and rabbi, states that the moral and ethical incompleteness of medicine has become very apparent. Medicine and religion are often at the top of the hierarchy of knowledge constructed by philosophers. Yet we have completely separated the two. We are now more than half a century into the era of the centrality of the person in medicine; yet, basic disregard of the patient still exists (Cassell, 1997). This most often consists of diagnostic and therapeutic actions seemingly indifferent to the person within the patient. Cassell states that the paradox is that physicians care, but their medicine is uncaring.

Dossey (1996) reports that, upon admission to the hospital, the physical and mental status of the patient are usually assessed. As part of the initial examination, the religious affiliation of the patient is determined so that the proper chaplain can be included in the total care of the individual. Often this is the fulfillment of any formal attention that the hospital gives to spirituality. If inclusion of the religious counselor as a regular team member of the patient care team is routine early in training, it will continue in the future physician's practice.

Methodology offers science its most powerful tool for investigation (Braverman, 1987). Physicians, as scientists, have as their most powerful tools of analysis or diagnosis, the physical and mental status examination. The spiritual inventory, which may become part of the medical assessment, may be useful in identifying patients who

will have a greater challenge coping with illness. In addition, a spiritual inventory or assessment can help the physician unite the healing encounter in body, mind, and spirit.

Spiritual distress is already a diagnosis found in nursing manuals and is defined as a disruption in the life–principle, which pervades a person's entire being (Braverman, 1987). Criteria include anger toward God, anger toward religious representatives and verbalization of concerns about a relationship with the Deity. Nurses, as a profession, are more advanced and sensitive to patient spiritual concerns than many physicians. Spiritual dysfunction often accompanies emotional and physical illness. An awareness of spiritual disease can create knowledge of spiritual fitness which is an integral part of health (Braverman, 1987).

Plato observed: "The great error in the treatment of the human body is that physicians are ignorant of the whole. For the part can never be well unless the whole is well" (Jaffe, 1980, p. 4). About attention to the spirit, Dossey quotes another of the ancients, appropriately. "Pythagoras believed that the most divine art was that of healing. And if the healing art is most divine, it must occupy itself with the soul as well as the body. No creature can be sound so long as the higher part in it is sickly" (p. 44). Hippocrates learned from Pythagoras that health as wholeness meant that the body and spirit must be examined together. Harmony between body and spirit was a common theme in ancient Greek thought, literature and culture. Complete or whole human beings are those who grasp the sense of this harmony and implement it in their own lives.

Spirituality in Professional Preparation

The importance of the individual spiritual life must be emphasized in a medical curriculum if academic fragmentation is to be minimized and all resources are to be utilized for the welfare of the patient. Ignoring the spiritual portion of a person's life, to refuse to accept, rather than integrate it into the total care of the patient, is less than what should be expected of those dedicated to the healing profession. Many physicians are convinced that historically, no healing took place, because there was no true science in medicine (Jaffe, 1980). In these complex, modern times, where much that is important has been lost, a re-examination of the spiritual aspects of illness and healing is necessary, not to replace science, but to expand it.

Students in the health professions must reflect seriously on meeting the medical and the spiritual needs of their patients, if they are to treat the whole person (Shriver, 1998). Health profession students study bodies and minds during their training and education, but also must examine what keeps the human machine running – the faith that gives people the ability to live with adversity. Religious professionals should be a dynamic part of their education and training and be considered integral members of the health care team (Puchalski & Larson, 1998).

Hart (1995) provides several illustrations of how spirituality could enter the physician's professional role: 1) a physician colleague with a substance abuse issue, 2) a patient's spiritual or religious orientation may affect their opinion of the authority or competence of the physician, 3) family members of a chronically ill child, 4) a Jehovah's

Witness patient needing blood products, 4) a traumatic injury or death in a family, or 5) a Do Not Resuscitate (DNR) order. These are just a few examples of the many possibilities in the practice of medicine and how spirituality would necessarily be introduced or included by the physician. Medical school is described as "a crucible of an emotionally wrenching experience which most students undergo with little formal or informal support from faculty or their peers" (Hart, 1995, p. 58).

Highly respected figures in the health care field are stating that it is time to take prayer and spirituality seriously and many of their colleagues are beginning to listen (Dillard & Ziporyn, 1998). As further evidence, courses on spirituality and healing are being offered at prestigious medical schools and future physicians are learning how to become more compassionate and talk to patients about religious and spiritual issues. Weil states the two most famous segments from the Hippocratic Oath are: "first, do no harm (primum non nocere) and second, honor the healing power of nature (vis medicatrix naturae)" (p. 213). Medicine offers much attention to the first, but neglects the second and perhaps ignores, even challenges the body's natural ability to fight disease and illness.

Spirituality and Wellness among Physicians

Dr. Hunter "Patch" Adams (1998), in his popular book Gesundheit, expresses the belief that modern medicine is crying out for help and hope. Adams' message is that medical professionals are less vibrant and joyful about human service, perhaps because Adams believes that modern medicine must be returned to true service. Medicine has

shifted from the individual and community level to the corporate level, and has become the nation's "number one industry." Patients are often defined by their illness or malady and treated impersonally, by impersonal medical professionals, in a distant, impersonal system. Adams further believes that service is one of the great medicines of life. Medicine is quite unfulfilling without a sense of service to patients. Service can provide inner peace and a means of expressing thanks; a way to appreciate the wonder of life. Service to fellow human beings is the greatest call of most faiths (Adams, 1998).

Modern medicine has become one of the most spiritually malnourished professions in our society. Most healers thoughout history would view today's medical profession as intrinsically peculiar, since throughout history spirituality and healing have been closely related (Dossey, 1996).

It has been theorized that modern medicine impedes the healing process by fostering the idea of separateness between mind, body, and spirit. The spiritual nature and needs of patients are virtually ignored in modern health care practices (Quinn, 1985). While mind and body each have specialists, care of the spirit is usually, in a hospital setting, entrusted to the chaplain on duty. In practice, there exists an acknowledgement of the spiritual needs of the ill person; however, in reality there seems to be an inverse relationship with the patient and their physical health. The less likelihood of recovery, the greater the acknowledgment of the spiritual needs and for those professionals prepared to address them. In the dimension of the healing arts, even with technology, laboratories and science, failure still exists (Quinn, 1985). Spiritually-centered health

practitioners are left with themselves; imperfect and fallible. But therein lies their strength – loving and compassionate human carers, using their most powerful instrument, that of spirituality. They are not afraid or intimidated by this dimension of health, it is welcomed, embraced, and incorporated into total care of the patient (Quinn,1985).

In a recent study of primary care physicians, Xu and Veloski (1999) report that the most significant difference between those physicians planning to leave and those remaining in their chosen field of primary care is primarily personal; individual social values and the influence of their faith. Veninga (1997) reports that some attempts have been made to study and measure the stress of practicing medicine among physicians and prospective physicians. Yet, Vanderpool and Levin (1997) conclude that, apart from anecdotal evidence, very little is known about the spiritual beliefs and attitudes of health care professionals.

As discussed earlier in this paper, a number of observations have been made and fashioned into recommendations for managing the stress of being a physician. These recommendations included emphasizing leisure, an optimistic attitude, time with friends, effective time management, and continued professional growth (Veninga,1997). These strategies were organized to cultivate the overall wellness of physicians. Yet, there seems to be a missing element; a spiritual dimension. Olive (1995) communicates that spirituality and wellness, in a physician's personal life, relates to and involves not only their own personal wellness, but the physician-patient relationship, and their practice of

medicine. A preliminary step in investigating the relationship between spirituality, wellness, and medicine is to begin with an examination of prospective physicians.

CHAPTER III: METHODOLOGY

The methodology of this study is discussed here in relation to its population sample, instruments, procedures, and treatment of data.

Population Sample

Medical students (n= 77) in a north Texas medical school comprised the population involved in the study. The students were recruited on a voluntary basis and no attempt was made to individually identify any of the subjects. Permission was obtained from the participating institution, the course instructor, and the University's Human Subjects Review Committee. Also included are letters of permission from the authors of the selected survey instruments. (See Appendix B & C).

Instrumentation

The instrument chosen to evaluate the spiritual dimension of individual subjects was the Spiritual Involvement and Beliefs Scale (1998, see Appendix B). The Spiritual Involvement and Beliefs Scale (SIBS) is an updated and improved version of the Spiritual Well-Being Scale (Paloutzian & Ellison, 1982) which has been noted for its limitations, such as a narrow focus upon Judeo-Christian perspectives, and on spiritual beliefs rather than actions (Hatch,et al., 1998). The developers of the SIBS desired an instrument that was morecomprehensive and more widely applicable for assessing an individual's spiritual status. They sought input from a wide variety of individuals and perspectives including Christianity, (many different denominational perspectives) Judaism, Islam, Hinduism, and 12-Step groups (those without adherence to any

traditional religious perspective). The SIBS has been found, through investigation and application, to be a pragmatic, reliable (test- retest, r = .92 and Cronbach's Alpha = 0.92) and valid measure of spirituality. The SIBS was found to have a high correlation to the Spiritual Well Being Scale (r = 0.80) and deemed an accurate, abbreviated representative of the longer instrument. Test-retest reliability for each factor was calculated to be 0.91 for external/ritual, 0.88 for internal/fluid, 0.88 for existential/meditative, and 0.64 for humility/personal application. Generic wording was used in the instrument as much as possible to avoid cultural and religious bias. The instrument developers report that the SIBS appears to be well accepted and easily understood by people from different religious and spiritual backgrounds. The SIBS was also found to be easily administered and scored. The authors have recommended that future research be directed toward the four-factor structure of the instrument (Hatch, et al., 1998).

The instrument chosen to evaluate the wellness dimension of individual subjects was the Duke Health Profile (Parkerson, Broadhead & Tse, 1990, see Appendix B). McDowell and Newell (1996) describe the Duke Health Profile as a 17-item generic, self-report instrument containing six positive wellness measures (physical, mental, social, general, perceived health, and self-esteem) and four negative wellness measures (anxiety, depression, pain, and disability). Items were derived from the 63-item Duke-UNC Health Profile (Parkerson, 1984). Reliability was supported (r = .78) and validity demonstrated by scored correlations to other previously proven instruments. The Duke Health Profile

is presented as an abbreviated instrument for measuring health as an outcome of medical intervention and health promotion (Parkerson, et al., 1990).

Procedures

The last ten minutes of one pre-arranged class day, Tuesday, February, 23rd, 1999, was designated for study implementation. The course instructor, announced that there was an opportunity to participate in a study measuring spirituality and wellness among prospective physicians. The instructor introduced the researcher and exited the classroom, so that no influence or pressure to participate was perceived. The researcher then briefly described the purpose and scope of the study and invited students willing to participate to remain in their seats while materials were distributed. Those that did not wish to participate exited the classroom.

A copy of the study instructions and information page, the Duke Health Profile, and the Spirituality Inventory and Beliefs Scale were distributed to the voluntary participants. Participants were asked to read the attached instruction and information page and complete the two one-page instruments. The data collection was completed in approximately ten minutes.

A statistically insufficient number of participants were recruited through personal contact with the first year class. Consequently, second year students were provided copies of the survey instruments through university and campus mail. Voluntary participants were asked to return their completed questionnaires within 3 days, to a "drop box" located near the student mailboxes. Statistical comparisons between these two

different data sets have been implemented to control for individual group differences; none were detected. A total of fifty-three first year students were recruited during the class, with fifty usable responses collected and included in the study. Three days after the initial mailing to the second year students, a total of thirty-three responses were collected, with thirty included in the study. Thus, a total of 80 usable instruments were collected from a possible two hundred first and second year students.

Treatment of Data

The researcher screened the data collected from the study for multicollinearity and normality (skewness, kurtosis and outliers). SPSS (version 8.02, 1998) and SYSTAT (version 8.0, 1998) were utilized to statistically measure the relationship between the independent and dependent variables. The independent variables were the indices listed as components of spirituality. The four indices were External/Ritual, Internal/Fluid, Existential/Meditative, and Humility/Personal Application. The two dependent variables were positive wellness (comprised of physical, mental, social, perceived health, self-esteem, and general health), and negative wellness (comprised of anxiety, depression, pain, and disability).

An alpha level of .05 was used. A multiple regression statistical analysis was used to examine the data. Two separate analyses were performed on each of the dependent variables, on the positive and negative wellness categories, respectively. The squared multiple r indicated the relationship between the dependent variables, both positive and negative components of wellness, and the four predictor variables of

spirituality. The adjusted squared multiple r generated by the multiple regression analysis quantifies the predictability of the four indices in spirituality and the positive and negative components of wellness in this study.

CHAPTER 4: FINDINGS

Analyzing the significance of and relationship between spirituality and wellness in prospective physicians was the basis for this investigation. This chapter contains demographics, statistical analyses, listings of the individual hypotheses, and ANOVA summary tables from the study.

Demographics

The study involved first and second year prospective physicians (medical students) at a north Texas medical school. The population group of 80 students was comprised of 45 males and 35 females. The ethnicity of the group was comprised of 39 Anglo, 29 Asian, seven Hispanic, three Middle-Eastern, and two identified as Other. In the group, five were born outside of the United States, 54 were born in Texas, and 21 were born in other states, (elsewhere) in the United States. The subjects, by definition as medical students, are a select group. Ages were from 21 to 38. The ethnicity of the subjects did not reflect that of the general population. There was a statistical overrepresentation of Asian and Hispanic students (36 % and 9 % respectively). Anglo and African Americans were underrepresented (49 % and 0 % respectively). The Association of American Medical Colleges reports from 1997–98 data that Asian Americans comprise 18.4 %, Hispanic Americans 4.6 %, African Americans 7.9% and Anglo Americans 64.9% of all U. S. medical students (AAMC, Annual Fall Enrollment

Questionnaire). Thus, this sample is ethnically somewhat different than the total U.S. medical student population.

The responses to students' religious affiliation identified 52 Christians, seven Hindus, two Buddhists, two Moslems, one Jew, one New Age, one Humanist, 12 reported no religion, and two did not respond to this item. There were 50 students identified as first year and 30 as second year students. Fifty-nine percent of the students were in the 23 to 27 age category. There were ten students in the18 to 22 age category and 23 in the twenty-eight or older category.

Results of Statistical Analyses

Of a possible 200 first and second year students, a total of 83 completed the two survey instruments. However, because of incomplete data on three of the instruments, 80 were included in the study for final analysis. Three participants were statistically removed from the first year student group because their reported scores were determined to categorize them as outliers. These outlier participants, omitted from their individual group assessment, were also excluded from the combined group analysis.

The instrument chosen to measure the spirituality component in the study was the Spiritual Involvement and Behavior Scale (SIBS). The Duke Health Profile (Duke) was chosen to measure the wellness component.

The four independent variables in the SIBS were External/Ritual, Internal/Fluid, Existential/Meditative, and Humility/Personal Application. The five dependent variables from the Duke were the positive and negative wellness indicators of

the first, and second year and the combined medical student classes. In the following pages the statistical analyses for this study are reported. The data were analyzed at a 0.05 significance level.

Hypothesis 1

The four indices of the Spirituality Inventory and Beliefs Scale (SIBS) will not predict positive wellness measured by the Duke Health Profile.

First-Year Students

A multiple regression analysis was applied to responses of all first-year students (n=47) to determine whether the four indices of the Spirituality Inventory and Beliefs Scale (SIBS) predicted positive wellness measured by the Duke Health Profile. As indicated in Table 1, there was no significant correlation found between the four indices of the Spirituality Inventory and Beliefs Scale (SIBS) and positive wellness measured by the Duke Health Profile. The null hypothesis was accepted for positive wellness in the first-year students.

Table 1

ANOVA Summary Table of a Multiple Regression Analysis for Spirituality Predicting Positive Wellness: First-Year Students

Source	Sum of Squares	df	Mean-Square	F-ratio	p
Regression	339.133	4	84.783	0.474	0.755
Residual	7513.060	42	178.882		
Total	7852.193	46			

$R^2 = 0.043$ Adjusted $R^2 = 0.000$
$P < 0.05$

Second-Year Students

A multiple regression analysis was applied to responses of all second-year students (n=30) to determine whether the four indices of the Spirituality Inventory and Beliefs Scale (SIBS) predicted positive wellness measured by the Duke Health Profile.

As indicated in Table 2, a statistically significant correlation was found ($R_2 = 0.043$, $p = 0.006$) between the four indices of the Spirituality Inventory and Beliefs Scale (SIBS) and positive wellness measured by the Duke Health Profile. The null hypothesis was rejected in Table 2 for positive wellness in the second-year students. The most significant r-square value of the spirituality variables (External/Ritual,

Internal/Fluid, Existential/Meditative, and Humility/Personal Application) was (R_2 = 0.078) in the Humility/Personal Application category.

Table 2

ANOVA Summary Table of a Multiple Regression Analysis for Spirituality Predicting Positive Wellness: Second-Year Students

Source	Sum of Squares	df	Mean-Square	F-ratio	p
Regression	1576.670	4	394.167	4.604	0.006
Residual	2140.573	25	85.623		
Total	3717.243	29			

R^2 = 0.424 Adjusted R^2 = 0.332
P < 0.05

Combined Classes

A multiple regression analysis was applied to responses of the combined classes of students (n=77) to determine whether the four indices of the Spirituality Inventory and Beliefs Scale (SIBS) predicted positive wellness measured by the Duke Health Profile.

According to Table 3, there was no significant correlation found between the four indices of the Spirituality Inventory and Beliefs Scale (SIBS) and positive wellness measured by the Duke Health Profile. The null hypothesis was rejected in Table 3 for positive wellness in the combined classes of students.

Table 3

ANOVA Summary Table of a Multiple Regression Analysis for Spirituality Predicting Positive Wellness: Combined Classes

Source	Sum of Squares	df	Mean-Square	F-ratio	p
Regression	1037.160	4	259.290	1.749	0.149
Residual	10376.033	70	148.229		
Total	11413.193	74			

$R^2 = 0.091$ Adjusted $R^2 = 0.039$
$P < 0.05$

Hypothesis 2

The four indices of the Spirituality Inventory and Beliefs Scale (SIBS) will not predict positive wellness measured by the Duke Health Profile.

First-Year Students

A multiple regression analysis was applied to responses of all first-year students (n=47) to determine whether the four indices of the Spirituality Inventory and Beliefs Scale (SIBS) predicted negative wellness measured by the Duke Health Profile.

As indicated in Table 4, there was no significant correlation found between the four indices of the Spirituality Inventory and Beliefs Scale (SIBS) and negative wellness measured by the Duke Health Profile. The null hypothesis was accepted in Table 4 for negative wellness in the first-year students.

Table 4

ANOVA Summary Table of a Multiple Regression Analysis for Spirituality Predicting Negative Wellness: First-Year Students

Source	Sum of Squares	df	Mean-Square	F-ratio	p
Regression	74.300	4	18.575	0.122	0.974
Residual	7513.060	42	151.662		
Total	7587.360	46			

$R^2 = 0.012$ Adjusted $R^2 = 0.000$
$P < 0.05$

Second-Year Students

A multiple regression analysis was applied to responses of all second-year students (n=30) to determine whether the four indices of the Spirituality Inventory and Beliefs Scale (SIBS) predicted positive wellness measured by the Duke Health Profile.

As indicated in Table 5, a statistically significant correlation was found ($R^2 = 0.428$, $p = 0.006$) between the four indices of the Spirituality Inventory and Beliefs Scale (SIBS) and positive wellness measured by the Duke Health Profile. The null hypothesis was rejected in Table 5 for positive wellness in the second-year student group. The most significant r-square value of the spirituality variables (External/Ritual, Internal/Fluid, Existential/Meditative, and Humility/Personal Application) was ($R_2 = 0.078$) in the Humility/Personal Application category.

Table 5

ANOVA Summary Table of a Multiple Regression Analysis for Spirituality Predicting Negative Wellness: Second-Year Students

Source	Sum of Squares	df	Mean-Square	F-ratio	p
Regression	878.063	4	219.516	4.679	0.006
Residual	1172.850	25	46.914		
Total	2050.913	29			

$R^2 = 0.428$ Adjusted $R^2 = 0.337$
$P < 0.05$

Combined Classes

A multiple regression analysis was applied to responses of the combined classes of students (n=77) to determine whether the four indices of the Spirituality Inventory and Beliefs Scale (SIBS) predicted negative wellness measured by the Duke Health Profile.

According to Table 6, there was no significant correlation found between the four indices of the Spirituality Inventory and Beliefs Scale (SIBS) and negative wellness measured by the Duke Health Profile. The null hypothesis was accepted in Table 6 for negative wellness in the combined classes of students.

Table 6

ANOVA Summary Table of a Multiple Regression Analysis for Spirituality Predicting Negative Wellness: Combined Classes

Source	Sum of Squares	df	Mean-Square	F-ratio	p
Regression	473.311	4	118.328	1.024	0.401
Residual	8088.832	42	115.555		
Total	8562.143	46			

$R^2 = 0.055$ Adjusted $R^2 = 0.001$
$P < 0.05$

The four independent variables in the SIBS (the Spiritual Involvement and Beliefs Scale) were External/Ritual, Internal/Fluid, Existential/Meditative, and Humility/Personal Application. The six dependent variables from the Duke were the positive and negative wellness indicators of the first year, second year, and combined group of prospective physicians. The data were analyzed at a 0.05 significance level. The null hypothesis stated that the SIBS indices would not predict positive (Hypothesis 1) or negative (Hypothesis 2) wellness measures. Both hypotheses were rejected specifically for the analysis involving second-year students.

CHAPTER 5: DISCUSSION

This study examined the relationship between spirituality and wellness in a population sample of medical students (prospective physicians). The literature search revealed that little exists as a precedent for investigating spirituality and wellness in prospective physicians. This was surprising, because in the literature, medical students (prospective physicians) comprise a frequently studied group. This trend was most apparent in the process of securing permission to recruit medical students as participants in the study. The health science center Institutional Review Board was deliberate in protecting students from any perceived pressure or influence from the faculty to encourage student participation.

The ethnicity represented in this study may not be representative of most first and second year medical school classes throughout the country. There appears to be more Asian-Americans than other minority students that are attending medical school programs in institutions across the country. Gender should not be considered an issue in this study. The percentage of females (43.75%) is close to the national average, which is 42.6% according to recent figures from the Association of American Medical Colleges (AAMC, Annual Fall Enrollment Questionnaire, 1997-98).

The study may have been over-represented with participants that described themselves as Christians (65%). This may have had an effect on the final statistical analysis. Geographical location of the study and the identified area where the majority of the participants grew up may have influenced the results of the study. There were a

higher percentage of identified Christians in the South and Southwest than in other areas of the country. This area of the United States has been described as "the Bible Belt" and Texas is certainly included. Many of the participants in the study grew up in the Bible Belt or in Texas (68%) and this may have influenced the analysis with an over-representation of Christians as compared to other faiths.

The original hypotheses for this study were:

1) The four indices of the Spirituality Inventory and Beliefs Scale (SIBS) will not predict positive wellness measured by the Duke Health Profile.
2) The four indices of the Spirituality Inventory and Beliefs Scale (SIBS) will not predict negative wellness measured by the Duke Health Profile.

Both of these hypotheses were applied to the responses of each of the three groups (first year students, second year students, and combined groups). In the first year group, the null hypothesis was accepted, meaning that neither the positive or negative wellness indicators from the Duke Health Profile were significantly correlated to the indices from the Spiritual Inventory and Beliefs Scale. This was also true of the combined group of both first and second year students. However, when the second year group data was analyzed, a statistically significant correlation was detected in relation to both hypotheses. Thus, for second year students, spirituality was a significant predictor of wellness.

In both the negative and positive wellness categories, the second year student group produced a statistically significant relationship to the spirituality measures;

the External/Ritual, Internal/Fluid, Existential/Meditative, and Humility/Personal Application. In both instances the Humility/Personal Application measure was identified as the most significant or powerful of the spirituality indices. The beauty of this significance speaks to the efficacy of the spirituality measurement instrument (the SIBS). The Humility/Personal Application measure of the SIBS, went beyond assessing the spiritual beliefs of an individual and sought information about the action and application of those identified beliefs and values. Stated differently, individuals can express what they believe, but a closer examination of the manner in which those beliefs are applied in the individual's life provides the best evidence of total influence.

There are several reasons that might explain the statistical significance of this phenomenon. Second year students:

1) were recruited by mail; therefore, students that were more interested in spirituality and wellness may have been more likely to self-select as participants;
2) as a group, were older and perhaps more mature with respect to spirituality and wellness;
3) are approaching their clinical training experience and may have a greater sense of personal wellness and spiritual involvement;
4) represented a higher percentage of self-identified Christians (73%);
5) had an additional year of medical school experience and, perhaps as a result, a more measured spiritual perspective.

Some studies have indicated that spiritual matters tend to become more important to individuals as they mature. Yet, no research exists that supports this change as it relates to first and second year medical students. More research is necessary to confirm this observation.

Second year students that were interested in and who valued spirituality may have been more likely to participate or be included in the study. This phenomenon is consistent with research findings related to self-selection. It is possible, however, that greater experience in medical training among second year medical students could influence spiritual perspectives. Second year students have had greater exposure to clinical medicine through a physical diagnosis and examination course and a lecture series on spirituality, religion, and medicine. This training could certainly increase or heighten awareness about the mind, body and spirit connection. C. S. Lewis is quoted in Healing Words, (Dossey, 1993) "the great religions were first preached and practiced without anesthesia" (p. 198). This statement suggests that pain, suffering, and religious zeal go hand in hand. When science arrived and transformed medicine, it was no longer necessary for medicine and religion to associate. Emphasizing the role of faith and a belief in healing appears to be a step backward for most scientists (and physicians) and justifies a rejection of any spiritual basis for healing.

The higher percentage of self identified Christians (75%) in this group of second year students, as compared to the first year students (65 %) may have contributed to the phenomenon. In the absence of statistical proof, interpretive caution is warranted.

However, such a difference would be consistent with a number of studies in which religiosity or spirituality has had a positive effect on mental or psychological well being. Ferraro and Albrecht-Jensen (1991) highlight several studies included in this positively effected health status category (Vanderpool and Levin, 1987; Zuckerman et al, 1984; Ellison et al; Koenig et al, 1988, Pollner, 1989; Levin, Larson & Puchalski, 1997; Hatch et al, 1998; Matthews et al, 1998). Levin, Larson and Puchalski (1997) state that "systematic reviews and statistical analyses quantitatively confirm that religious involvement is an epidemiologically protective factor" (p. 792).

Spirituality is an ever and rapidly growing area of interest in science and medicine. This interest in spirituality is not a new or recent phenomenon; it has been a constant in the healing field. The beginning of the new millennium may help create and influence interest in spirituality. There also seems to be a not so recent movement that has steadily moved the population toward alternative or complementary medicine. It may not be a movement away from traditional medicine as much as toward something different in the field of health and healing. Spirituality falls into this realm of healing. Sometimes, it is difficult to determine where the distinction exists between health and spirituality and what influence each has on the other.

I would welcome more research on spirituality in health education and health promotion and its implementation in the classroom and workplace. We exist in a culture that does little to promote the spiritual dimension of life. The pendulum is swinging with respect to spirituality and religion in our legal system. We have emphasized the

emphasized the separation of church and state and the population of our country is aware that the First Amendment protects us from the establishment of a national religion. We have interpreted that to mean protection from all religion and religious symbols (i.e. no religion). There is a natural association between religion and spirituality, and it is a fairly simple process to exclude any religious or spiritual element from life. We have seemingly achieved this exclusionary environment in a short period of time and with little effort. The value of spirituality must be taught in our homes, schools, and places of employment. If employers were to recognize the inherent value of a strong spiritually grounded employee there would be more willingness to emphasize this in a school or workplace environment. Lower health insurance premiums, improvement in absenteeism, improved mental health, and more productivity are among some of the potential benefits to schools and industry.

Spirituality has long been an important aspect of illness, disease, injury, and healing. It is an appropriate time for spirituality to be given its proper place and perspective in medicine. Future research should be directed toward the inclusion of spirituality in wellness and health promotion endeavors. Wonderful opportunities exist for health professionals to include spirituality in their daily interaction with patients, their families, and co-workers. There is expectation that this study will be a continuation of the groundwork that has previously been laid for future research in the areas of spirituality and wellness in the health professions. Much remains to be done in these areas that have been largely ignored in medicine. There also seems to be mounting

pressure on prospective physicians and the institutions that train and educate them to continually increase clinical competence and efficiency, which has and may continue to lead to neglect matters of the spirit in health care. Prospective physicians should have exposure during their education and training years to the faith and religious needs that patients and families possess. The study of spirituality and the influence of religion is a growing trend in many medical schools nationally and will better prepare physicians to meet the needs of patients and their families in the future.

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Appendix A

Memorandum

Date: February 18, 1999

To: Institutional Review Board

From: Lee C. Ancona, Ph.D. (pending)

Re: Request for Exempt Review

Attached please find copies of two questionnaire documents that will be used to survey medical students at the **University of North Texas Health Science Center – Fort Worth.** This study will further investigate the relationship between spirituality and wellness. This research will be the basis for my dissertation entitled, "A Correlation of Spirituality and Wellness among Prospective Physicians."

This is a non-clinical investigation that will be distributed, on a voluntary basis, to medical students at any level of their education or training. In the past several years there has been a significant increase in interest in the areas of spirituality and medicine. Investigating this complex relationship between the science and art of medicine and spirituality, in a subject population of future physicians, is the basis for this research project.

This request for an exemption is best defined **by #2. Research involving the use of educational tests,** found in the **UNTHSC Exempt Status** document. The requirement of informed consent is unnecessary, thus a waiver is requested, since each survey instrument will have the following statement attached; "I understand that the return of my completed questionnaire constitutes my informed consent to act as a participant in this research project."

Please contact me if there are any questions or concerns with regard to the survey instruments or any of the related materials. Thank you for you attention.

Lee C. Ancona
509 El Chico Trail
Weatherford, Texas 76087

(817) 441-8801
leeancona@hotmail.net

Protocol Description

I. Purpose

The purpose of this research project is to further investigate the relationship between spirituality and health. There has been an increasing interest in the areas of spirituality and medicine. Using future physicians as participants in this study will provide insight into the relationship between doctors, faith and their patients.

II. Background

Current literature suggests that there is a significant relationship between spirituality and health. This study will investigate the relationship of spirituality as measured through the Spiritual Inventory and Beliefs Scale (SIBS) and wellness as measured in the Duke Health Profile.

III. Criteria for inclusion of Subjects

All medical students who voluntarily choose to participate will be included in this study. The investigators hope to recruit a minimum of 100 participants in the study.

IV. Recruitment of Subjects

Near the end of class (tentatively, Tuesday, February 23rd or Wednesday, February 24th, 1999) an announcement will be made requesting that interested first year students may voluntarily participate in a research project. Completing

two short survey instruments is all that will be required. The students will be informed that the research project involves the relationship between spirituality and wellness.

V. Procedures

Students will be introduced to Mr. Lee C. Ancona, as class ends. Dr. Michael Smith, upon completing the introduction, will excuse himself from class and thus insure that no pressure or influence, perceived or otherwise, is communicated to the students. They will be asked to voluntarily participate in a research project involving the completion of two short questionnaires. Student participation will be strictly voluntary and total anonymity will be observed. Only gender, age, year in medical school, and religious affiliation information will be requested.

VI. Key Personnel

The Principal Investigator, Mr. Lee C. Ancona will administer the two brief questionnaires on the specified day, near the end of the selected class times. A brief explanation of the procedure will precede the administration of the surveys.

VII. Location of Research Activities

The questionnaires will be distributed and collected in the lecture hall where class is held. It is anticipated that a few students may wish to take copies of the surveys to complete them at a later time. We will ask that the surveys be returned upon completion. Second, third and fourth year students will also be recruited to

participate in the study. These students will be recruited through campus mail and only on a voluntary basis. These surveys will be collected at a "drop box" location in the student lounge and/or classroom in ME-I.

VIII. Potential Benefits

Benefits include having UNTHSC - FW students participate in a research project that will enable them to more closely examine their own spirituality and health. This may encourage prospective physicians, in this level of their training, to identify with their patients' spirituality and incorporate these issues into their practice of medicine.

Appendix B

[redacted]

TEXAS WOMAN'S
UNIVERSITY

HUMAN SUBJECTS
REVIEW COMMITTEE
P.O. Box 425619
Denton, TX 76204-5619
Phone: 940-898-3377
Fax: 940-898-3416

February 19, 1999

Mr. Lee Ancona
509 El Chico Trail
Weatherford, TX 76087

Dear Mr. Ancona:

[redacted]

Your study entitled "A Correlation of Spirituality and Wellness among Prospective Physicians" has been reviewed by a committee of the Human Subjects Review Committee and appears to meet our requirements in regard to protection of individuals' rights.

Be reminded that both the University and the Department of Health and Human Services (HHS) regulations typically require that agency approval letters and signatures indicating informed consent be obtained from all human subjects in your study. **These consent forms and agency approval letters are to be filed with the Human Subjects Review Committee at the completion of the study. However, because you do not utilize a signed consent form for your study, the filing of signatures of subjects with the Human Subjects Review Committee is not required.**

Your study was determined to be exempt from further TWU HSRC review because it has been reviewed and approved by the University of North Texas Health Science Center – Fort Worth and all of your subjects are located at this institution. However, another review by the Committee is required if your project changes. If you have any questions, please feel free to call the Human Subjects Review Committee at the phone number listed above.

Dissertation/Theses signature page is here.

To protect individuals we have covered their signatures.

University of North Texas
Health Science Center at Fort Worth
Texas College of Osteopathic Medicine
Institutional Review Board for the Protection of Human Subjects

BOARD ACTION

IRB PROJECT #: 98-39 DATE SUBMITTED: February, 1999

PRINCIPAL INVESTIGATOR: Michael L. Smith, Ph.D.

PROJECT TITLE: Spirituality, Health and Wellness

PROTOCOL #: N/A

DEPARTMENT: Integrative Physiology TELEPHONE EXTENSION: _____

In accordance with the UNT Health Science Center IRB Policy on the protection of human subjects, the following action has been taken on the above referenced protocol:

_____ Informed Consent approved as submitted on _____.

_____ Study Protocol dated _____ approved as submitted.

_____ Protocol Synopsis approved as submitted on _____.

_____ Amendment _____ to the protocol approved as submitted.

_____ Receipt and review of adverse event report dated _____ is acknowledged.

_____ Based on the recently completed Periodic Project Review (IRB Form 4), protocol has received continued approval through _____.

_____ Protocol has been approved, contingent upon the modifications outlined below being incorporated. In order to receive final approval, you must submit one copy of the modified protocol to the Chairman of the IRB for review and incorporation into the permanent IRB file.

_____ Consideration of the protocol has been tabled pending resolution of the issue(s) outlined below.

_____ Protocol is disapproved for the reason(s) outlined below.

Protocol is exempt from IRB review, under the provisions of 45 CFR 46.101 (b), #2. In addition, a waiver from the requirement to obtain informed consent is granted.

Reminder: "Raw data" from the study must be kept for 5 years after the completion of the study.

[redacted]

TEXAS WOMAN'S
UNIVERSITY
DENTON / DALLAS / HOUSTON

[redacted]
THE GRADUATE SCHOOL
P.O. Box 425649
Denton, TX 76204-5649
Phone: 940/898-3400
Fax: 940/898-3412

March 1, 1999

Mr. Lee C. Ancona
121 Lakeview
Aledo, Tx 76008

Dear Mr. Ancona:

I have received and approved the prospectus entitled **"Relationships Between Spirituality and Wellness among Prospective Physicians"** for your *Dissertation* research project.

Best wishes to you in the research and writing of your project.

Sincerely yours,

Dissertation/Theses signature page is here.

To protect individuals we have covered their signatures.

Appendix C

UNIVERSITY OF
FLORIDA

College of Medicine
Department of Community Health and Family Medicine

Health Science Center
PO Box 100222
Gainesville, FL 32610-0222
Tel: (904) 392-4321
Fax: (904) 392-7349

February 8, 1999

Lee C. Ancona
509 El Chico Trail
Weatherford, TX 76087

Dear Mr. Ancona,

Thank you for your interest in the scale we developed, the Spiritual Involvement and Beliefs Scale. You have my permission to use the scale in your research. Your project sounds very interesting, and I'm looking forward to hearing about your results!

Sincerely,

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To protect individuals we have covered their signatures.

DUKE UNIVERSITY MEDICAL CENTER
Department of Community and Family Medicine
Division of Family Medicine

February 19, 1999

Lee C. Ancona
509 El Chico Trail
Weatherford, Texas 76087

Dear Mr. Ancona,

You have our permission to use the Duke Health Profile in your research and dissertation.

Sincerely,

Dissertation/Theses signature page is here.

To protect individuals we have covered their signatures.

BOX 3886 • DURHAM, NORTH CAROLINA 27710 • TELEPHONE (919) 684-3620/684-6721
PICKENS FAX (919) 684-8975 • HANES FAX (919) 681-6560

Appendix D

Relationships Between Spirituality and Wellness among Prospective Physicians

Thank you for agreeing to participate in this study; it will require only a few minutes of your time. * *Written permission has been obtained to use the questionnaires chosen for this study.*

Please respond to all questions completely.

- **Circle the age group that best represents your age:**

  18 – 22 23 – 27 28 – 32 32 – 36 37 +

- **Circle your gender:** Male Female

- **Circle the group that best describes your ethnicity:**

  African American Anglo Asian Hispanic

  Middle Eastern Native American Other _____ (please list)

- **In what state did you spend the majority of the time growing up? If outside of the U.S., what country?** _____

- **Circle the best description of your spiritual or religious affiliation:**

  Atheism Buddhism Christianity Hinduism Humanism

  Islam Judaism New Age None Other _____ (please list)

- **Circle your classification as a student:** 1st year 2nd year 3rd year 4th year

* I understand that the return of my completed questionnaire constitutes my informed consent to act as a participant in this study.

The Spiritual Involvement and Beliefs Scale

Please answer the following questions by checking your response.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. In the future, science will be able to explain everything.	___	___	___	___	___
2. I can find meaning in times of hardship.	___	___	___	___	___
3. A person can be fulfilled without pursuing an active spiritual life.	___	___	___	___	___
4. I am thankful for all that has happened to me.	___	___	___	___	___
5. Spiritual activities have not helped me become closer to other people.	___	___	___	___	___
6. Some experiences can be understood only through one's spiritual beliefs.	___	___	___	___	___
7. A spiritual force influences the events in my life.	___	___	___	___	___
8. My life has a purpose.	___	___	___	___	___
9. Prayers do not really change what happens.	___	___	___	___	___
10. Participating in spiritual activities helps me forgive other people.	___	___	___	___	___
11. My spiritual beliefs continue to evolve.	___	___	___	___	___
12. I believe there is a power greater than myself.	___	___	___	___	___
13. I probably will not reexamine my spiritual beliefs.	___	___	___	___	___
14. My spiritual life fulfills me in ways that material possessions do not.	___	___	___	___	___
15. Spiritual activities have not helped me develop my identity.	___	___	___	___	___
16. Meditation does not help me feel more in touch with my inner spirit.	___	___	___	___	___
17. I have a personal relationship with a power greater than myself.	___	___	___	___	___
18. I have felt pressured to accept spiritual beliefs that I do not agree with.	___	___	___	___	___
19. Spiritual activities help me draw closer to a power greater than myself.	___	___	___	___	___

SPIRITUAL INVOLVEMENT AND BELIEFS SCALE

Please indicate how often you do the following:

	Always	Usually	Sometimes	Rarely	Never
20. When I wrong someone, I make an effort to apologize.	____	____	____	____	____
21. When I am ashamed of something I have done, I tell someone about it.	____	____	____	____	____
22. I solve my problems without using spiritual resources.	____	____	____	____	____
23. I examine my actions to see if they reflect my values.	____	____	____	____	____

24. During the last WEEK, I prayed. . . (check one)
- ____ 10 or more times.
- ____ 7-9 times.
- ____ 1-3 times.
- ____ 4-6 times.
- ____ 0 times.

25. During the last WEEK, I meditated. . . (check one)
- ____ 10 or more times.
- ____ 7-9 times.
- ____ 4-6 times
- ____ 1-3 times.
- ____ 0 times.

26. Last MONTH, I participated in spiritual activities with at least one other person. . . (check one)
- ____ more than 15 times.
- ____ 11-15 times.
- ____ 6-10 times.
- ____ 1-5 times.
- ____ 0 times.

Date Today: _____ Date of Birth: _____ Female: ___ Male: ___ ID Number: _____

DUKE HEALTH PROFILE (The DUKE)

INSTRUCTIONS:

Here are a number of questions about your health and feelings. Please read each question carefully and check (√) your best answer. You should answer the questions in your own way. There are no right or wrong answers. (Please ignore the small scoring numbers next to each blank.)

	Yes, describes me exactly	Somewhat describes me	No, doesn't describe me at all
1. I like who I am	12	11	10
2. I am not an easy person to get along with	20	21	22
3. I am basically a healthy person	32	31	30
4. I give up too easily	40	41	42
5. I have difficulty concentrating	50	51	52
6. I am happy with my family relationships	62	61	60
7. I am comfortable being around people	72	71	70

TODAY would you have any physical trouble or difficulty:

	None	Some	A Lot
8. Walking up a flight of stairs	82	81	80
9. Running the length of a football field	92	91	90

DURING THE PAST WEEK: How much trouble have you had with:

	None	Some	A Lot
10. Sleeping	102	101	100
11. Hurting or aching in any part of your body	112	111	110
12. Getting tired easily	122	121	120
13. Feeling depressed or sad	132	131	130
14. Nervousness	142	141	140

DURING THE PAST WEEK: How often did you:

	None	Some	A Lot
15. Socialize with other people (talk or visit with friends or relatives)	150	151	152
16. Take part in social, religious, or recreation activities (meetings, church, movies, sports, parties)	160	161	162

DURING THE PAST WEEK: How often did you:

	None	1-4 Days	5-7 Days
17. Stay in your home, a nursing home, or hospital because of sickness, injury, or other health problem	172	171	170