



Virginia Commonwealth University
VCU Scholars Compass

Theses and Dissertations

Graduate School

2008

How Well Does Spirituality Predict Health Status in People Living With HIV-Disease?

Rachel Kidd Cobb

Virginia Commonwealth University

Follow this and additional works at: <https://scholarscompass.vcu.edu/etd>

 Part of the [Nursing Commons](#)

© The Author

Downloaded from

<https://scholarscompass.vcu.edu/etd/994>

This Dissertation is brought to you for free and open access by the Graduate School at VCU Scholars Compass. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of VCU Scholars Compass. For more information, please contact libcompass@vcu.edu.

© Rachel Kidd Cobb 2008

All Rights Reserved

HOW WELL DOES SPIRITUALITY PREDICT HEALTH STATUS IN PEOPLE
LIVING WITH HIV-DISEASE?

A Dissertation submitted in partial fulfillment of the requirements for the degree of
Doctor of Philosophy at Virginia Commonwealth University.

by

RACHEL KIDD COBB
M.Div., Baptist Theological Seminary at Richmond, 1993
B.S.N., Virginia Commonwealth University School of Nursing, 1986
A.S.D., Southside Virginia Community College, 1979

Director: INEZ TUCK, PH.D., R.N., M.B.A.
PROFESSOR, SCHOOL OF NURSING

Virginia Commonwealth University
Richmond, Virginia
May 2008

Acknowledgement

It is with deep appreciation that I acknowledge the support and guidance that Dr. Inez Tuck, Dr. Nancy McCain, Dr. Chris Schubert, and Dr. Everett Worthington have provided during this dissertation process. Without their expertise and their encouragement during my own times of stress, I would never have completed this work. To my many friends and relatives, who provided listening ears and shoulders to cry upon, thank you from the bottom of my heart!

I would be greatly remiss if I did not acknowledge, with tremendous gratitude, the participants who volunteered their time to take part in this study. Their courage and faith have been a real inspiration and I am very thankful that they were willing to participate.

I dedicate this dissertation to my late husband, Len Cobb. Len was my biggest “cheerleader” and I will be eternally grateful for his love and support.

Table of Contents

	Page
Acknowledgements.....	ii
List of Tables	vii
List of Figures.....	viii
Chapter	
1 INTRODUCTION	1
Statement of Problem.....	2
Significance and Background.....	4
Study Purpose.....	13
Summary	14
2 LITERATURE REVIEW	16
Introduction	16
Historical Background.....	16
The Conceptual and Theoretical State of Knowledge Related to Health, Healing, and Spirituality.....	18
Definition of Spirituality	23
Definition of Health and Healing.....	25
Review of Research.....	28
Spirituality	29

	Differences According to Demographic Data	41
	Spiritual Needs and Nursing Care	53
	Spirituality and Healing.....	62
	Summary and Discussion	88
3	METHOD	95
	Introduction	95
	Research Design	95
	Conceptual-Theoretical Framework.....	96
	Participants	98
	Recruitment	98
	Sample Description	99
	Protection of Human Subjects	100
	Procedure.....	103
	Method.....	104
	Variables.....	104
	Instrumentation.....	105
	Data Preparation for Analysis	111
4	FINDINGS.....	112
	Introduction	112
	Instrument Reliability.....	112

Participant Characteristics	114
Findings According to Study Instruments	120
Findings According to Study Aims	125
Aim 1	125
Aim 2	129
Aim 3	129
Aim 4	131
Aim 5	131
Summary of Results	135
Demographic Findings	135
Spiritual and Religious Instrument Scores	136
Findings Related to Study Aims	137
5 DISCUSSION AND IMPLICATION OF FINDINGS.....	140
Introduction	140
Discussion	140
Demographic Findings	140
Study Aims	144
Aim 1	144
Aim 2	159
Aim 3	161

Aim 4.....	161
Aim 5.....	165
Summary of Key Findings	169
Strengths and Limitations.....	171
Implications	173
Future Research.....	173
Practice and Policy	176
Conclusion.....	177
References.....	180
Appendices.....	205
A Spiritual Well-Being Scale	205
B Brief RCOPE	207
C RCI-10.....	208
D The Sense of Coherence Questionnaire: Short Form.....	209
E 1993 Revised CDC Classification System for HIV Infection	211
F Revised HIV Center Medical Staging System (rHCMSS)	213
G Demographic Information Form.....	215
H Demographic Data Summary.....	217
Vitae.....	220

List of Tables

	Page
Table 1: Literature Search Results.....	8
Table 2: Scale Reliability.....	113
Table 3: Significant Correlations Between Research Instruments.	115
Table 4: Demographic Data of Age and Years HIV Positive (In Years).....	118
Table 5: Demographic Data Related to Income, Education, and Mental Disorder.	118
Table 6: Mean Scores (<i>SD</i>) by Gender.	121
Table 7: Instrument Mean Scores of Research Participants.	122
Table 8: Correlations Between Independent and Dependent Variables.	127
Table 9: Relationships Between Marital Status, SOC-13, Manageability, and Comprehensibility.....	128
Table 10: Regression Analyses for Independent Variables' Ability to Predict Health Status in People Living With HIV-Disease.	130
Table 11: Moderating Effects of Religious Coping on the Ability for Spiritual Well-Being to Predict Health Status in People Living With HIV-Disease.	132
Table 12: Interaction of Religious Coping and Existential Well-Being in Predicting Health Status.	134
Table 13: The Meaningfulness Subscale of the Sense of Coherence Scale 13 Compared to the Existential Well-Being Subscale of the Spiritual Well-Being Scale.	165

List of Figures

	Page
Figure 1: Method of HIV Exposure ($N = 27$)	119

Abstract

HOW WELL DOES SPIRITUALITY PREDICT HEALTH STATUS IN PEOPLE LIVING WITH HIV-DISEASE?

By Rachel Kidd Cobb, M.Div., Ph.D., R.N.

A Dissertation submitted in partial fulfillment of the requirements for the degree of
Doctor of Philosophy at Virginia Commonwealth University.

Virginia Commonwealth University, 2008

Major Director: Inez Tuck, Ph.D., R.N., M.B.A.
Professor, School of Nursing

Problem: The United States of America has one of the highest number of HIV infections in the world; approximately 1.3 million people in North America were living with HIV in 2007. Factors influencing HIV survival are essential to disease management and care. Research findings suggest religion and spirituality may be essential components to health and well-being in individuals with HIV-Disease.

Purpose: This study was designed to determine how well spirituality predicted health status in a convenience sample of 39 adults diagnosed with HIV-Disease.

Procedure: A model building approach was used to explore relationships among the five variables of the Neuman Systems model. The following were used to collect data: (physiological) 1993 Revised CDC Classification System for HIV Infection, Revised HIV Center Medical Staging Scale (rHMCSS), lowest ever CD4⁺T-lymphocyte count, current CD4⁺ T-lymphocyte count, AIDS status, and viral load; (spiritual) Spiritual Well-Being Scale (SWBS), Brief Religious Coping Scale (RCOPE), Religious Commitment Index—10, and religious affiliation; (psychological) Sense of Coherence—13 Scale (SOC) and mental health history; (sociocultural) ethnicity, income, and relationship status; (developmental) date of birth.

Results: Income, the Meaningfulness subscale of the SOC-13 scale, age, and the Existential Well-Being subscale of the SWBS had significant relationships with the current rHCMSS score and explained 28.3% ($p = .027$) of the variance. The model that included EWB, Negative RCOPE, and the interaction of Negative RCOPE and EWB, in which an adjustment for income had been made, explained 32.9% ($p = .011$) of the variance in health status.

Conclusions: The five variables of the NSM provided a well supported, holistic framework for investigating how much spirituality contributed to health status in PLWHA. The best explanatory model included: EWB, Negative RCOPE, income, and the interaction between EWB and Negative RCOPE. The existential component of spirituality, and especially the element of meaning, modified by negative religious coping, is an essential contributor to the health status of people living with HIV-Disease.

Software: This document was created in Microsoft Word 2000. Power analysis was done using nQuery 6.0 Software and SPSS 15.0 © Statistical Software program was used for other statistical analyses.

Introduction

“Every day, over 6,800 persons become infected with HIV [Human Immunodeficiency Virus] and over 5,700 persons die from AIDS [Acquired immunodeficiency Syndrome], mostly because of inadequate access to HIV prevention and treatment services” (Joint United Nations Programme on HIV/AIDS [UNAIDS], 2007, p.4). An estimated 33.2 million people worldwide were living with HIV-Disease in 2007. “The United States of America is one of the countries with the largest number of HIV infections in the world” (p.33), with numbers estimated to be approximately 1.3 million in North America. Approximately 2.5 million people worldwide became newly infected with the disease in 2007 and nearly 2.1 million died as a result of AIDS; between 18,000 and 31,000 of those deaths occurred in North America.

In addition to the untold human misery and grief caused by AIDS, the disease represents an enormous threat to economic development because it kills people in the prime of their working and parenting lives. This decline results in the erosion of the foundations upon which countries develop their societies and improve living standards; national growth is reduced, governance is weakened, human capital is destroyed, discouragement related to investment occurs, and productivity deteriorates. Many of the developmental achievements of past generations have been reversed in countries that have been most profoundly affected by the AIDS epidemic. It is estimated that the

number of people living in poverty has increased by 5% in countries that have been most affected by the epidemic. In those countries, productivity growth may be cut by as much as 50% as a result of the reduction in the ratio of healthy workers to dependent individuals (UNAIDS, 2004b).

“AIDS overtaxes social systems and impedes the health and educational development that enables poor people (especially children) to escape poverty” (UNAIDS, 2004b, p. 23). In some countries the life expectancy has plummeted by 20 years, and the number of orphans is projected to more than double by 2010. Since 1999 the average life expectancy has declined in 38 countries because of AIDS. These changes will pose unprecedented demands in terms of social welfare (UNAIDS, 2004b).

Statement of Problem

HIV/AIDS affects all dimensions of a person’s life: physical, psychological, social, and spiritual (Tuck, McCain, & Elswick, 2001; World Health Organization, 2004). “Mobilizing and building human capacity to respond to, cope with, and overcome the effects of HIV/AIDS is essential” (UNAIDS, 2004b, p. 26). Psychosocial support can assist people in coping better with the illness and improve the quality of their lives, and it helps to prevent further transmission of HIV infection. Such care is either infrequently provided or has not been documented in many affected areas (World Health Organization, 2004).

Research findings suggest that religion and spirituality may be essential components to health and well-being in individuals with HIV-Disease (Carson & Green,

1992; Carson, Soeken, Shanty, & Terry, 1990; Ironson & Schneiderman, 2002). Spiritual well-being has been demonstrated to have significant positive relationships with hardiness (Carson & Green, 1992), quality of life, and effective coping strategies; it has significant negative relationships with perceived stress, uncertainty, and psychological distress (Tuck, McCain, & Elswick, 2001). Engaging in spiritual activities has also been shown to have a significant relationship with long-term survival of people living with HIV/AIDS (Carson, 1993). “The findings of recent studies suggest that spirituality warrants further investigation as a factor that may influence well-being and quality of life, and may account for individual difference in response to illness” (Guillory, Sowell, Moneyham, & Seals, 1997, p. 55).

Factors that influence survival time after HIV-Disease diagnosis are essential to understanding the disease and to planning healthcare resources (Collaborative Group on AIDS Incubation and HIV Survival, 2000). Further research is critically needed in order to better understand what impact spirituality has on the health status and survivorship of people living with HIV/AIDS (PLWHA). The goal of this study was to determine how well spirituality predicts health status in PLWHA. This exploratory, quantitative study was the first in a series of studies by this researcher designed for determining the role of spirituality in the long-term survival of PLWHA. The knowledge that results from this program of research is critically needed in order to develop cost-effective measures that will facilitate the healing process and survivorship of HIV-Disease.

Significance and Background

Approximately 1.3 million people in North America were living with HIV in 2007. Because of the life prolonging effects of antiretroviral therapy and “the relatively stable number of new HIV infections each year in North America” (UNAIDS, 2007, p.33) the total number of people living with HIV has increased in the US. The estimated number of HIV/AIDS cases in this country increased from 2001 through 2004 in the age groups 15-24 and 50-65 and older; “The largest number of HIV/AIDS cases occurred among persons age 35-39 years” (Centers for Disease Control [CDC], 2005, p. 6). The estimated number of deaths also increased from 1999 through 2003 in the 45-65 and older group. An increase has been noted in the estimated number of HIV/AIDS cases among women, Caucasians, Hispanics, and Asians/Pacific Islanders. The number remains stable among American Indians/Alaska Natives and has decreased among African-Americans. However, African-Americans accounted for 48% of all new HIV diagnoses in 2005 even though they represented about 13% of the population. AIDS was the fourth leading cause of death for African-Americans aged 25-44 in the US in 2004 (UNAIDS, 2007). Hispanic people accounted for approximately 18% of the newly diagnosed cases of HIV in the US even though they comprised approximately 14% of the population.

Although Virginia’s population was only 2.5% of the US total in 2005 the state had 3.9% of the cumulative reported cases of HIV-Disease; it ranked tenth highest in the nation in annual reported cases. The number of people living with HIV in Virginia “has steadily increased from 6,730 to 18,587” (Virginia Department of Health [VDH], 2007, p. 6) between 1997 and 2006 even though the number of diagnosed cases of HIV/AIDS

had decreased. Although persons of African-American descent accounted for only 20% of the Virginia population, they comprised 64% of the total diagnosed cases of HIV/AIDS in 2006. Men of all races (73%) and people ages 30-39 (39%) were also diagnosed at a greater rate. “In 2006, the largest proportion of HIV/AIDS diagnoses were among men who have sex with men (56%), followed by heterosexual contact (27%) and injection drug use (8%)” (VDH, 2007, p. 7). Virginia had the twelfth highest number (8,550) of deaths in the nation due to AIDS, through 2005. “The percentage of PLWHA among the general population in Eastern and Central Virginia are considerably higher than in other regions” (VDH, 2000, pp. 11-12), and “Richmond has one of the highest historical levels of HIV incidence in the State” (VDH, 2004, p.11). The most recent reports (VDH, 2008) show that Richmond City health district had the second highest number of reported cases in the state for 2006 and 2007.

Approximately 39% of persons diagnosed with HIV-Disease progress to AIDS within 12 months. In 1981, patients diagnosed with AIDS were likely to live no longer than one or two years; with the introduction of antiretroviral therapy (HAART) people are living longer and healthier lives (National Institute of Allergy & Infectious Disease [NIAID], 2004). Nearly 83% of persons diagnosed with AIDS in the year 2000 survived for more than 36 months after diagnosis (UNAIDS, 2004a).

The CDC (2005) tracked survival rates of persons whose diagnoses were made during the period of 1996 through 2003. The data revealed that survivorship increased with the year of diagnosis for persons who were diagnosed during that time. However, “survival decreased as age at diagnosis increased among persons at least 35 years old” at

the time of diagnosis (CDC, 2005, p. 8). The lowest survival rate was among men and women who were intravenous drug users (IDUs). The survival rate for non-Hispanic Blacks, particularly at more than 48 months after diagnosis, was lower than the rates for Hispanics, non-Hispanic Whites, and Asians/Pacific Islanders (CDC, 2005).

In spite of the effectiveness of HAART, the AIDS epidemic is having an impact far more devastating globally than ever imagined (UNAIDS, 2004b). The epidemic is destroying economic gains, decreasing life expectancy, increasing child mortality, and orphaning millions. AIDS is also threatening to undermine national security in highly affected societies due to the increased burden the disease places on the socioeconomic structure.

Community and popular forces such as faith-based groups and social justice groups have proven to be powerful and effective in their responses to the HIV/AIDS epidemic; faith-based groups have been especially effective in supporting preventive measures (Avants, Warburton, & Margolin, 2001; Jemmott, Jemmott, & Villarruel, 2002). Based on the critical need for development of preventive measures, governmental agencies as well as the private sector are encouraged to enhance their support for these community forces (UNAIDS, 2004b).

During a workshop held in 2000, UNAIDS identified ways in which communication programs could be implemented that would support prevention of HIV/AIDS and would augment HIV/AIDS related care and treatment. The workshop participants, “emphasised that HIV/AIDS communication programmes should harness peoples’ spiritual domains” (p. 7). Making meaning has been identified as one of the key

elements of the spiritual domain (Chiu, 2000; Coyle, 2002; Ferrell, Grant, Gunk, Otis-Green, & Garcia, 1998; Flannelly, Flannelly, & Weaver, 2002; Fryback, & Reinert, 1999; Halstead & Hull, 2001; Hungelmann, Kenkel-Rossi, Klassen, & Stollenwerk, 1996). In a study with PLWHA conducted by Carson et al. (1990) the researchers state that individuals must be able to believe there is value and purpose for living and believe that their life has meaning. Meaning, value, and purpose in life are required for maintaining hope and therefore are existential concerns as well as spiritual ones. As a result of a 1999 study, the basic assumption of UNAIDS is that the logic and theory of HIV/AIDS strategies should evolve from the meanings and values of the members of the affected population. As suggested earlier, spirituality warrants further investigation regarding its role as a possible factor in individual differences in response to illness (Guillory et al., 1997).

As background for this study, a literature search was conducted using the databases of CINAL, PubMed, PsychInfo, Web of Science, and Dissertation Abstracts (see Table 1). The search terms utilized were “healing and (spirituality or religion) and (HIV or AIDS)”. Although spirituality is the focus for this study, the term *religion* was included in the search because, “there is no general agreement on the definition of spirituality among investigators; spirituality has been closely aligned to religion and has become indistinguishable in its conceptualization” (Tuck, 1998, p. 68). In addition, spirituality and religion are often used interchangeably (Barnum, 2003; Martsolf & Mickley, 1998; Taylor, 2003; Tuck, 2004; Tuck & Baliko, 2001). Religious

Table 1: *Literature Search Results*

Data Base	Keywords			
	Spirituality Or Religion	Healing	(Spirituality or Religion) & Healing	(Spirituality or Religion) & Healing & (HIV or AIDS)
CINAL	1,896	1,354	76	6
PubMed	7,018	20,481	203	8
PsychInfo	180	232,994	692	25
Web of Science	30,337	42,804	265	4
Dissertation Abstracts (PhD)	47,691	4,084	1,016	16
			TOTAL	59

well-being has also been theorized as a component of overall spiritual well-being (Paloutzian & Ellison, 1982).

The literature search was limited to research articles that were written in English and involved adult, human participants (refer to Table 1). The search resulted in a total of 59 articles. Twenty-two articles remained after discarding duplicate ones and those in which the topic of interest was not the focus of the study. Five additional research articles were later identified for a total of 27. Fourteen of the studies were quantitative, 11 were

qualitative, one article was a literature review, and one study combined both quantitative and qualitative methodologies.

The samples of these studies were diverse with 52% (14) of the studies including both male and female participants; five (19%) of the studies involved only male participants, and four of those included only gay and/or bisexual males. There was also a varied array of study topics. The largest number of the studies ($n = 7$, 26%) explored spirituality and its relationship to various psychosocial variables. The other research studies: explored the role of spirituality in dealing with the stress of HIV-Disease ($n = 3$, 11%), examined self-care ($n = 3$, 11%), sought to identify AIDS related positive changes ($n = 3$, 11%), explored the experience of having HIV-Disease ($n = 2$, 7%), and investigated the meaning and use of the term spirituality ($n = 2$, 7%). Only one study for each of the following research topics was identified: how health is described, concepts of spirituality, health illness beliefs, relationship of spirituality to abstinence of illegal drugs, spiritual interventional study, role of religion/spirituality to physical indicators of health, finding meaning as related to immune status, and the relationship of stress to immunological indicators. These were important foci of study, however the limited number demonstrates the need for further research in the area of spirituality and health.

HIV-Disease has a devastating affect upon the immune system. Therefore it is crucial that the effects of spirituality upon the immune system be explored in order to determine if it is a contributing factor to the health status of PLWHA. Although many of the studies reviewed indicated a relationship between spirituality and health and/or healing in PLWHA, only two of those studies (McCain et al., 2007; Woods, Antoni,

Ironson, & Kling, 1999) explored the relationships between indicators of religion or spirituality and immune factors indicative of health status. The study conducted by Woods et al. involved only symptomatic HIV-infected gay men. The measures of religiousness used in that study included only religious coping and religious behavior and did not address the existential aspects of spirituality, which according to the study by Tuck, McCain and Elswick (2001) are important to the health of this population group. The participants' utilization of religious resources were measured by the report of how many times in the past 30 days they had prayed, attended religious services, read religious material, and discussed spiritual issues with lay-people. Factor analysis of the religious data produced two factors that were moderately correlated ($r = 0.31$). Factor one items dealt with coping mechanisms employed in the face of HIV infection and were labeled "Religious Coping." Current "Religious Behaviors" comprised the factor two items. The two factors were used as predictor variables to test the study hypotheses. However, the findings indicated that only religious behavior was significantly associated with $CD4^+$ count ($p < 0.01$), accounting for 15% of the variance in immune status. "Religious behavior (e.g., service attendance, prayer, spiritual discussion, reading religious literature) was significantly associated with higher T-helper-inducer cell ($CD4^+$) counts and higher $CD4^+$ percentages, but not with depression" (p. 165). The findings suggest that the association between participants' religious behavior and $CD4^+$ cell counts was independent of disease progression and therefore an important contribution to the immune status of participants. Information about the religious affiliation apparently addressed religious upbringing and not current religious affiliation or beliefs. This raises

questions of whether current religious practices and beliefs are different from those experienced during upbringing and if so, do those differences have impact on current health status?

McCain et al. (2007) conducted a randomized clinical trial to test the efficacy of three 10-week stress management intervention groups (cognitive-behavioral relaxation training [RLXN], focused tai chi training [TCHI], and spiritual growth groups [SPRT]). A control group (CTRL) was also included in the study. The purpose of the study was to determine if the three interventions would result in improvements in the areas of psychosocial functioning, quality of life, and physical health among persons with varying stages of HIV-Disease; and, to determine if the improvements would be sustained for a period of 6 months.

Data were collected from 252 participants at pre-intervention and post-intervention and at 6-month follow-up visits. Of the 252 participants, 60% was male, 75% African-American, 23% European American, and 1.6% Hispanic American. The average age of the participants was 42.2 years. Sixty-eight (30%) participants completed the SPRT group. The investigators report that, all three intervention groups had higher lymphocyte proliferative function when compared to the CTRL group. The SPRT group also had higher natural killer cell cytotoxic function (42.81 LU vs. a decrease of -38.28 LU), higher levels of IFN- γ production (215.38 vs. -196.14), and significantly increased levels of IL-4 production (0.28 vs. -0.26). The SPRT group also had an increase (838.5 vs. -1698.8) in the physiological variable of lymphocyte proliferation between the pre-intervention and the 6-month follow-up visits. The researchers conclude that the findings

indicated “the interventions were associated with enhancement in immune system functional status” (McCain et al., 2007, p. 20) and that the increased natural killer cell function for the SPRT group marked an additional functional enhancement. However, the researchers report there were no significant changes evident in the pre-to post-intervention Spiritual Well-Being Scale (SWBS) and subscale scores for any of the study intervention groups possibly indicating a ceiling effect. Therefore it is unclear as to the relationship between spirituality, as measured by that scale, and the health status for participants of this study. Additional research, using different measures of spiritual growth, could shed further insight into the relationship between spirituality and health status. Further study is also needed to determine the mechanisms by which the interventions effect immune enhancement.

Results of selected research conducted to date suggest the critical importance of the relationship between spirituality and health. These findings are consistent with perspectives of researchers who propose that spiritual dimensions of care are fundamentally important to healing in the truest sense of the word (Haggart. 1996). Further, that “Spirituality is the integrative force for existence of the whole and a critical factor in the healing process” (Tuck, 2004, p. 70); the holistic healing of the mind and body are crucial factor for obtaining optimal wellness (Gucwa, 2002). Gucwa clearly reminds us of the significance of these perspectives in that nurses are not only responsible for the physical needs of patients but are also responsible for the innermost needs, such as spirituality, as well.

Study Purpose

There are several gaps in the current empirical literature regarding the relationship of spirituality and HIV/AIDS and several questions remain unanswered. First, the majority of the studies are psychosocial in nature; they focus primarily on defining spirituality and exploring the relationship of spiritual well-being to variables such as quality of life, hope, and mood states. The relationship of spirituality to health, healing, and survivorship among persons with HIV/AIDS remains enigmatic because of the limited amount of research in these areas. Second, regardless of the fact that nursing as a formal profession grew from spiritual roots (Barnum, 2003), spirituality as a distinct concept is seen in very few nursing theories and models. Therefore, additional research that seeks to clarify the concept is needed and nurse theorist must explore how the concept should be integrated into nursing theory. Furthermore, no studies were found that addressed the question of how long-term survivors of HIV/AIDS experience spirituality in health and healing. This study sought to address these gaps by exploring how well spirituality predicts health status in people living with HIV-Disease. The specific aims for this study were to:

1. Determine the relationships among specific variables (physiological, psychological, sociocultural, developmental, and spiritual) of the Neuman Systems Model in this population.
2. Determine the extent to which the group of independent variables (psychological, sociocultural, developmental, and spiritual) of the Neuman Systems Model, taken together, predicts the physiological dependent variable of health status.

3. Determine the relationship between spirituality and the physiological status of PLWHA, after controlling for the psychological, sociocultural, and developmental variables.
4. Determine the relative importance of spirituality in explaining health status in comparison with the psychological, sociocultural, and developmental variables.
5. Determine if religious coping has a moderating effect on health status and spiritual well-being.

Summary

The HIV/AIDS epidemic is having a devastating effect worldwide. It has tremendous impact, not only on the lives of PLWHA and their loved-ones, but also upon society as a whole. Research to date has been primarily in the area of the relationship between spirituality and psychosocial factors. Spirituality is reported as an important part of the HIV/AIDS experience (Guillory et al., 1997). Dimensions of spirituality in PLWHA have been found to have a positive relationship to quality of life and social support (Tuck, McCain, & Elswick, 2001), effective coping mechanisms (Dane, 2000; Tuck, McCain, & Elswick, 2001), hardiness (Carson, 1993; Carson & Green, 1992), psychological well-being (Coleman & Holzemer, 1999), hope (Carson et al, 1990, Harrison, 1997), and improved mood (Sicher, Targ, Moore, & Smith, 1998). Studies suggest that spirituality has a negative relationship to perceived stress, uncertainty, psychological distress, and emotional-focused coping (Tuck, McCain, & Elswick, 2001).

Spirituality has also been associated with significantly fewer new AIDS-defining illnesses and fewer hospitalizations (Sicher et al., 1998).

Because of the limited scope of spirituality research thus far, the phenomenon of spirituality in the context of illnesses (Guillory et al., 1997) such as HIV/AIDS needs to be explored more thoroughly. Few studies have investigated the relationship between spirituality and health status in people living with HIV-Disease. Such research could contribute to the knowledge of how spirituality influences health outcomes and survival and whether the effects of spirituality in PLWHA matter over time. This preliminary quantitative study was the first step in a series of studies needed to determine what role spirituality plays in long-term survival of PLWHA. The knowledge that resulted from this study is critical for the next step of development of cost-effective measures that facilitate the healing process for PLWHA.

Literature Review

Introduction

This chapter presents a review of the current research findings regarding spirituality and health and/or healing and also their conceptual-theoretical aspects. Of particular interest will be those studies in which participants are experiencing chronic or life-threatening diseases and explore the interplay between spirituality and health and/or healing in PLWHA, which is the focus of this research.

Historical Background

Barnum (2003) has stated that the curing aspects of human activities have been linked to spirituality from the very earliest of times. She emphasized that nearly every group of indigenous people, throughout the world, has practiced some form of healing or shamanism that linked notions of “reality and health” (p.21). A renewed focus on spirituality has emerged in nursing in the last decade. Barnum related this renewed interest to three forces being at work: (a) a major shift in world view regarding the way that reality is being interpreted, (b) renewed attention being given to the spiritual impact of new care delivery models, and (c) the spiritual focus that exist in a growing self-help movement.

Barnum (2003) explained that much of the emerging paradigm shift originated in the changes occurring in the relationship of spirituality to physics, philosophy, and psychology. In particular, she stated that as the current knowledge of physics expands it is becoming a bridge between science and spirituality. Barnum posed the question, “Is physics presently revealing a deep underlying core of spirituality in our reality?” (p. 39). Barnum’s observations lend support to the supposition that spirituality has impact upon the physical health status of individuals.

Many view modern nursing as having begun with Florence Nightingale. Calabria and Macrae (1994) emphasized that Nightingale “sought to unify science and religion in a way that would bring order, meaning, and purpose to human life” (p. ix). She was at the forefront of the religious and philosophical thought of her day and her spiritual views were presented in a three-volume unpublished work entitled, *Suggestions for Thought* (Calabria & Macrae, 1994). Nightingale was best known for her writings on nursing practice and yet the context for all of her work can be found in the pages of those three unpublished volumes. For Nightingale, mystical union with God was the source of strength and guidance for doing one’s work in the world. Her spiritual views can be seen reflected poignantly in *Notes on Nursing* (Nightingale, 1860/1969), in which she states, “What nursing has to do...is to put the patient in the best condition for nature to act upon him” (p. 133). Nightingale’s holistic view of nursing care reflected a philosophy founded upon an intimate relationship between spirituality and healing.

Calabria and Macrae (1994) suggest that spirituality was the basis for all of Florence Nightingale’s work. However, despite this long nursing tradition rooted in

spirituality, only in the past three decades have nursing researchers began to explore this topic. In 1978, an important step was taken when The National Group for Classification of Nursing Diagnosis tentatively categorized spiritual problems as “matters of spirituality” (Stoll, 1979). The diagnosis is based on the assumption that human beings possess a spiritual orientation that is integral to existence and that it can be disrupted (Reed, 1991). This influential step provided some of the impetus needed for further nursing study related to spirituality.

Barnum (2003) agreed that the nursing profession’s attention to spirituality has, “waxed and waned over the decades” (p. ix). In the recent past nursing care has been influenced by a rationalistic paradigm that views the mind, body, and spirit as separate entities. Nursing is gradually returning to its roots founded in a holistic paradigm and nurse scientists are developing theories of nursing that reflect a holistic perspective of nursing care. The understanding of this shifting paradigm supports this study.

The Conceptual and Theoretical State of Knowledge Related to Health, Healing, and Spirituality

Martsof and Mickley (1998) reviewed current nursing theories for the purpose of determining the degree to which the theorists address the concept of spirituality. They state that Peplau, Orlando, King, and Orem do not address the concept of spirituality in their models. In the theories of Levine, Roy, Leininger, and Rogers, the concept of spirituality is implied or embedded in the model as a sub-concept rather than a major one.

Martsof and Mickley found that the concept of spirituality was included as a major focus only in the nursing models of Newman, Parse, Watson, and Neuman.

The first of these conceptual models is the Newman nursing model, entitled “Health as Expanding Consciousness”. Margaret Newman’s (1986, 1994) theory of health is subtly intertwined with the concept of spirituality. Newman defines consciousness as the capacity of the system to interact with the environment. Newman contends that the process of life involves movement towards higher levels of consciousness and that this process is facilitated by insight. The process involves a transcendence of the spatial-temporal self to a spiritual realm. Martsof and Mickley (1998) point out that Newman’s theory equates spirituality broadly with human interactions, which are a concern and responsibility of nursing. According to Newman, the goal of nursing is to assist the movement of the client towards expanded consciousness. This movement results in transcendence from boundaries that are physical toward a spiritual dimension. The nurse-client relationship is characterized as one that is a partnership, which leads to expansion of consciousness for both the nurse and the patient.

The second model was developed by Rosemarie Parse (1998) who built on the work of Martha Rogers in developing her theory of human becoming. Whereas none of Parse’s assumptions directly mention spirituality, the attributes of spirituality (i.e. meaning, value, and becoming) are important aspects of her theory (Martsof & Mickley, 1998). Nursing practice based on the human becoming school of thought involves three dimensions: illuminating meaning, synchronizing rhythms, and mobilizing

transcendence. The concepts of meaning making (Chiu, 2000; Coyle, 2002; Ferrell et al., 1998; Flannelly et al., 2002; Fryback, & Reinert, 1999; Halstead & Hull, 2001; Hungelmann et al., 1996) and transcendence (Coward & Reed, 1996; Coyle, 2002) have been recognized as elements of spirituality.

Thirdly, the focus of Jean Watson's Theory of Human Caring (1999) is the caring-to-caring transpersonal relationship. The relationship, according to Watson, has healing potential for both the one who is caring and the one who is being cared for. Watson states, "caring in nursing conveys body physical acts, but embraces the mindbodyspirit as it reclaims the embodied spirit as the focus of its attention" (p. 10). Fawcett (2000) contends that Watson's theory "is based on a humanitarian, metaphysical, spiritual-existential, and phenomenological orientation that draws on Eastern philosophy" (p. 658). Watson's ideas are concerned with spirit rather than matter and her theory goes beyond current approaches to nursing because it incorporates the concept of the soul and transcendence. Martsof and Mickley (1998) state that a basic assumption of Watson's theory is the acknowledgement of a spiritual dimension of people that is referred to as the soul. The soul is the living template of the evolved human. It is a non-physical aspect of the human that is the energy source of every aspect of health or illness of the body. A troubled inner soul can lead to illness, and that illness can produce disease. One's energy and influence radiate outward, soul-to-soul, and thereby can become an instrument of constructive change.

According to Watson (1999), "the soul perspective returns us to the archetypal, the sacred energy, the light of our being, which contributes to personal and human

evolution” (p. 151). Health involves physical, social, esthetic, and moral realms.

Therefore, health is the harmony and unity among body, mind, and soul. Health also is associated with the degree of congruence between the self as it is experienced and the self as it is perceived. Illness, in turn, is not necessarily disease but may also be a subjective turmoil or disharmony.

The Neuman Systems Model (Neuman & Fawcett, 2002) was the conceptual-theoretical-empirical model that was the guiding framework for this study. The Neuman model was chosen because of its comprehensiveness; it incorporates the concept of expansiveness noted in Margaret Newman’s (1986, 1994) theory and the concept of energy as a source of health and healing as found in Watson’s (1999) theory. The role of spirituality is also much more clearly defined in the Neuman Model than in those of Newman and Parse (1998).

The Neuman Systems Model (NSM) is a comprehensive systems-based conceptual framework. The NSM assumes that each person is born with a spiritual energy force and that the body has the potential to be nourished through the positive use of this spiritual energy. A major characteristic of the systems concept is expansiveness and the belief that a living open system is never at rest. Expansiveness allows change to be easily assimilated. The philosophy upon which the NMS is based includes the idea of what Neuman (2002) refers to as “wholism.” According to Neuman, wholism refers to the belief that no part of a system is to be considered in isolation but is to be viewed as part of the whole. There is a composite of five interacting variables depicted in the NMS: physiological, psychological, sociocultural, developmental, and spiritual. These variables

are present in varying degrees of development and have a wide range of interactive potential.

Neuman's (2002) theory postulates that the spiritual variable is an innate component of one's basic structure, whether or not it is ever acknowledged or developed by the client. It is viewed as being on a continuum of development that permeates all other system variables. A client/client-system can move from complete unawareness of the variable's presence and potential, or even denial of it, to a consciously and highly developed spiritual understanding that supports optimal wellness. The theory states that one's spirituality controls the mind and the mind consciously or unconsciously controls the body. The spiritual variable positively or negatively effects or is affected by the conditions and interactive effects of other variables, such as grief or loss. Such variables may arrest, decrease, initiate, or increase spirituality. The potential exists for movement in either direction on a continuum. These elements of Neuman's concept provide the theoretical basis for examining the relationship between spirituality and health status explored in this study.

Neuman (2002) contends that purposeful interventions that support spirituality may catalyze an energy source that is useful in achieving change and optimal system stability. Neuman's model served as a guiding framework for this study because it clearly defined the role of spirituality and depicted health as being on a continuum that could be influenced by other system variables such as spirituality. The topic of intervention was not a specific focus of this study; the focus was to explore the relationships between the variables of the NSM, especially that of spirituality and health status. It is proposed,

however, that the knowledge derived from this study is relevant to the development of effective interventions.

Definition of Spirituality

Many questions have been posed regarding the concept of spirituality and spirituality and religion are often used interchangeably (Barnum, 2003; Martsolf & Mickley, 1998; Taylor, 2003; Tuck, 2004; Tuck & Baliko, 2001). Mickley, Soeken, and Belcher (1992) argue that although spirituality and religiousness are conceptually linked, they are not the same. The concept of spirituality has gradually evolved into a broader concept than religion; it is defined as a universal human capacity to transcend the self and to connect with others, the environment, and God/Higher Power/the transcendent (Hermann, 2000; Highfield, 1999; Newman & Fawcett, 2002; Reed, 1991). This human quality of transcendence creates the spiritual need for finding meaning in life, hope, love, forgiveness, trusting relationships, and a connection with the transcendent (Hermann, 2000; Highfield, 1999; Reed, 1991). Another way to discuss spirituality is as well-being. Mickley et al. describe spiritual well-being as multidimensional, including the existential and the religious as well as the perception that one's life has meaning.

An earlier literature review (Cobb, 2002) was conducted for the purpose of determining how the word spirituality is defined. The review included 47 articles from various healthcare provider areas such as: nursing, medicine, pastoral care, psychiatry, health education, and social work. Descriptive, anecdotal, quantitative and qualitative research, and philosophic analysis articles were among those reviewed. The findings of

all studies were recorded and content analyzed. The findings indicate that spirituality is an ever-changing process that is unidirectional; it does not necessarily parallel psychological or physical development (Chiu, 2000; Halstead & Hull, 2001). Elements of the concept are: meaning making/discovery (Chiu, 2000; Coyle, 2002; Ferrell et al., 1998; Flannelly et al., 2002; Fryback, & Reinert, 1999; Halstead & Hull, 2001; Hungelmann et al., 1996), self-transcendence (Coward & Reed, 1996; Coyle, 2002), purpose (Coyle, 2002; Ferrell et al., 1998; Halstead & Hull, 2001; Hungelmann et al. 1996), connectedness (Coyle, 2002; Halstead & Hull, 2001; Hungelmann et al., 1996), hope (Coyle, 2002; Ferrell et al., 1998; Flannelly et al., 2002; Fryback & Reinert, 1999; Halstead & Hull, 2001), source of strength and comfort (Flannelly et al., 2002; Halstead & Hull, 2001), and a coping mechanism (Flannelly et al., 2002; Raleigh, 1992; Targ & Levine, 2002). These findings are supported by the results of qualitative studies conducted by Tuck and Cobb (2002) and Tuck and Thinganjana (2007) in their work with HIV-infected study participants.

Coyle (2002) used the concept-indicator model to identify empirical indicators or essential attributes of spirituality from existing literature. She found the following key aspects of spirituality: transcendence, meaning and purpose, connectedness, hope, and faith. She suggests that these elements work to produce health benefits in relation to prevention, recovery from illness, or coping with illness. Her findings are consistent with the other studies reviewed.

Spirituality has been defined by Tuck (1998) as “the essence of an individual and is expressed in the outward manifestations of thoughts, feelings, and behaviors that allow

meaning making, peace, hope, and connectedness with self, others, nature, and God or higher power” (p. 1). Tuck emphasizes that there have been few intervention studies related to spirituality. In addition to the complexity and costliness of such studies, she cites the absence of a widely accepted definition of spirituality among investigators is one of the key problems that needs to be addressed. Tuck proposes that it is the lack of consensus regarding the definition that “has made it difficult to capture the essence of the phenomenon and develop interventions” (p. 68).

For purposes of this study, the key elements of the concept of spirituality found in the literature review were used to define the term “spirituality”. Spirituality was defined according to Neuman’s theory (2002), which describes it as an innate component of one’s basic structure that permeates all other system variables. Furthermore, it was defined as a universal human capacity to transcend the self and to connect with others, the environment, and God/Higher Power/the transcendent (Hermann, 2000; Highfield, 1999; Newman 2002; Reed, 1991). The expression of spirituality can be observed, “in the outward manifestations of thoughts, feelings, and behaviors that allow meaning making” (Tuck, 1998, p. 1).

Definition of Health and Healing

Neuman (2002) defines health as optimal system stability. The concept of health is depicted as being a continuum on which wellness and illness are on opposite ends. Newman envisions health as existing at changing levels within a normal range; it may rise or fall throughout one’s lifespan depending on basic factors and the ability of one to

adjust to environmental stressors. When more energy is generated than one needs, he/she will experience movement towards wellness; when less energy is being generated than needed, the movement will be towards illness and possibly death. Neuman goes on to state that wellness is a state of saturation and is free of disrupting needs, whereas illness is a “state of insufficiency with disrupting needs unsatisfied” (p.25).

Moch (1998), like Newman (1986, 1994), believes that healing can occur even though one’s disease is not cured and contends that illness is a potential catalyst for growth. She presents the concept of health-within-illness. From her research with women diagnosed with breast cancer, she developed the following definition of her concept: Health-within-illness is, “an opportunity that increases meaningfulness of life through connectedness or relatedness with the environment and/or awareness of self during a state of compromised well-being” (p. 305).

Healing is a concept that also remains confusing and inexact (Glaister, 2001; Gauthier, 2002). This lack of clarity leads to difficulties in measurement and theory development. Healing comes from the Old English term *haelen*, which means wholeness; it “refers to a desired wholeness, the process of moving toward that desired wholeness, or the interactions that lead to this desired wholeness” (Kritek, 2000, p. 314). But Kritek begs the question, “Wholeness of what?” (p. 314). Only the individual with the desire to move toward wholeness can determine when he or she feels whole or when the wholeness that is sought has been achieved.

Quinn (1997, 2000) states that healing is a process distinct from that of curing of disease; it entails the emergence of right relationship at or among the multiple levels of

the human experience. Cure refers to the alleviation of symptoms and it focuses on the disease process as opposed to healing; healing focuses on the person with the disease (Landis, 1997). Tuck (2004) describes healing as “a transformative process which occurs during illness, in addition to the efforts made to treat or eradicate the disease (curing)” (p. 67).

Chiu (2000) postulates that healing involves the process of transcendence, during which a person evolves to a higher-order of wholeness. When healing occurs, relationships are restored to and within one’s self, to others, to God, and with one’s purpose (Chiu, 2000; Glaister, 2001). Glaister emphasizes that healing enables a person to have the strength, knowledge, and willingness to facilitate changes that lead to self-acceptance. Changes evoked by healing may be physical, mental, emotional, social, or spiritual. The consequences of healing are a change and a reconnection of the mind and body; it is holistic and ongoing and not limited to the event at hand. Chui states that healing involves taking responsibility for one’s illness without blaming; she believes blaming results in regret and guilt. Whereas, healing results in being open to whatever one encounters with love, awareness, and appreciation.

Wendler (1996) conducted a concept analysis for the purpose of developing “a clear definition of the concept of healing within a Rogerian/Newmanian framework” (p.836). As a result of those findings, Wendler defines healing as “an experiential, energy-requiring process in which space is created through a caring relationship in a process of expanding consciousness and results in a sense of wholeness, integration, balance, and transformation and which can never be fully known” (p. 841). Parse, Coyne,

and Smith (1985) believe that health is a unique experience and that the individual who is living it is the only one who can describe it. According to Parse et al., health is “an intersubjective process of transcending with the possibles” (p. 28).

Elements from Neuman’s (2002), Newman (1986, 1994), Moch’s (1998), and Tuck’s (2004) definitions were incorporated in the definition of health and healing for the purpose of this research study. Health was defined as “being at various, changing levels within a normal range, rising or falling throughout the life span because of basic structure factors and satisfactory or unsatisfactory adjustment by the client system to environmental stressors” (Neuman, 2002, p. 23). Healing was defined as a potential catalyst for growth that affords the PLWHA the opportunity for transcending the spatial-temporal self to a spiritual realm and facilitates meaning discovery and identification of purpose in life. The word healing was used to describe the transformative process that occurs on a physical, psychological and spiritual basis. This transformative process occurs “during illness, in addition to efforts made to treat or eradicate disease” (Tuck, 2004, p. 67). Such healing is conceptualized as a movement along a continuum toward wellness as defined by Neuman.

Review of Research

As noted in Table 1, only 59 articles were obtained from an electronic search using the keywords “(spirituality or religion) and healing and (HIV or AIDS)”. Duplicate studies and those studies that did not address the relationships between the areas of interest were discarded, leaving only 22 articles. Five other articles were found in

addition to the original 22 and are included in this review of literature. Due to the paucity of research findings, all studies in the areas of spirituality, religion, health, and healing are discussed including those that involve population groups other than individuals with HIV/AIDS.

Spirituality

Nurses recognize that attention to the spiritual dimensions of individuals is necessary in order to provide holistic healthcare; however, according to Tuck and Baliko (2001), many are not sure how to integrate spiritual care into their practice. One of the factors contributing to this uncertainty may be confusion about the distinctions between religion and spirituality (Barnum, 2003; Martsof & Mickley, 1998; Taylor, 2003; Tuck, 2004; Tuck & Baliko, 2001). The term spirituality may mean different things to different people. Tuck and Baliko observe that at one extreme spirituality may be used as a catchword for anything with a humanitarian bent and at the other it may be closely associated with religion. Likewise, “The term religiousness can refer to organizations, denominational affiliation, or attendance of religious services but also may be used in a broader sense to mean feelings of spirituality” (Halstead & Mickley, 1997, p. 227). This section describes studies that explored the definitions of spirituality.

In one of the very early studies involving participants who had been diagnosed with AIDS, Bridge (1986) used a phenomenological approach to explore the experience of having the disease. Bridge conducted open-ended interviews with 10 homosexual males that had been diagnosed with AIDS a minimum of 6 months prior to the study.

Two interviews were conducted with each participant and the proceedings were tape-recorded and transcribed. Bridge then used a five-step procedure adapted from Colaizzi to ascertain the meanings of the phenomena for the participants.

Bridge (1986) found that the diagnosis of AIDS had a tremendous impact on every aspect of the participants' existence. In the process of dealing with the diagnosis, individuals reexamined previous beliefs regarding everything from religion to death and acceptance of their sexuality. Everything in their lives had been threatened, including love and work. To those diagnosed with AIDS, the future seemed to be cut off and their hopes and aspirations taken away from them. In addition, the men experienced their emotions as being out of control. Bridge states that in the midst of the chaos associated with being diagnosed with AIDS came a desire to understand "why AIDS, why me, why now?" (p. vi). This struggle to make or discover meaning in the midst of a stressful life event has been substantially identified as a component of spirituality (Chiu, 2000; Coyle, 2002; Ferrell et al., 1998; Flannelly et al., 2002; Frankl, 2000; Fryback, & Reinert, 1999; Halstead & Hull, 2001; Hungelmann, et al., 1996) although Bridge does not label it as such.

Hall (1998) conducted a qualitative study based on interpretive interactionism to explicate the role of spirituality in dealing with the many struggles of advanced HIV-Disease. Participants were men ($n = 5$) and women ($n = 5$) in advanced stages of HIV-Disease who had self-identified as having had spiritual or religious experiences that helped them to cope with the disease. The ages of the informants ranged from 32-38

years. There were 6 European Americans (60%), 2 Mexican Americans (20%), 1 African-American (10%), and 1 Native American (10%).

Audio taped interviews ranged from 2 to 3 hours in length and occurred at a site convenient to the participant. The purpose of the study was to explore how spirituality, as defined by the participant, helped him/her deal with HIV-Disease. Hall (1998) reports that participants could identify differences between the definitions of spirituality and religion, however much of their personal spirituality was expressed by references to God or a higher power. Hall relates that the themes associated with participants' statements regarding their spirituality were in a language, which was unique to persons living with HIV-Disease.

Hall (1998) reports the findings demonstrated three major themes were constructed to show how positive personal meaning emerges from rejecting contexts and the knowledge that one has a terminal illness. The three themes identified by Hall were: purpose in life emerges from stigmatization, opportunities for meaning arise from a disease without a cure, and spirituality frames life following suffering. Hall states, "the way spirituality emerges in HIV is partly a function of how belief must decline and strengthen in a stigmatized and ill population in order to preserve the integrity of a self under siege" (p. 152). For the majority of the participants, organized religion had served as a barrier to attaining spirituality until their anger had been ameliorated.

Narayanasamy (1995) conducted another study to clarify the meaning of spirituality. The grounded theory pilot study gathered data on participants' perspectives of spirituality and spiritual needs and the role of nurses in meeting those spiritual needs.

Data were obtained from in-depth interviews with 6 chronically ill patients who were receiving nursing care in a medical ward. The four core categories that surfaced as perspectives of spirituality from the interview data were theistic traditions, subjective dimensions, aesthetic qualities, and spiritual needs.

Under “Theistic Traditions,” Narayanasamy (1995) states that several patients expressed a variety of meanings in their understanding of spirituality. Some of the ways respondents described their spirituality was a “belief in ‘God’, ‘someone out there’, and ‘a presence’” (p. 397). Prayer and worship appeared to be key features of spirituality, and spirituality seemed to be a subjective experience. Regarding “Subjective Experience”, Narayanasamy states participants kept their spiritual experiences and practices very private for fear that others would ridicule them if they were revealed. The participants expressed strong emotional responses related to institutional aspects of spirituality such as religion and corporate worship. Those emotions ranged from anger to doubts; there were also feelings of ambivalence regarding religious leaders. Finally, “Aesthetic Qualities” suggest that patients spend a great deal of time contemplating the beauty of God’s creation, such as nature. “Patients also derived a sense of calmness and peace when talking to a person about their spirituality” (Narayanasamy, 1995, p. 398). When addressing the core category of “Spiritual Needs”, Narayanasamy relates that the crisis of a chronic or life-threatening illness evokes a need for spiritual support. As a result, patients resort to various spiritual coping mechanisms such as bargaining with God for a miracle and making pleas to God through prayer. Narayanasamy states that faith in God

gave some participants hope that was necessary for coping with the crises brought on by their illness.

According to the perceptions of the patients, there are several reasons why nurses do not adequately provide for the spiritual needs of patients. Although nurses acknowledge their role in providing for these needs, they were often seen as “too busy” to do so. There was also the perception that some nurses had little or no understanding of spirituality themselves and were therefore not seen as sources of help in the area of spiritual care. Narayanasamy’s findings are interesting in light of those by Tuck, Pullen, and Wallace (2001), which support Narayanasamy’s (1995) findings.

Tuck, Pullen, and Wallace (2001) explored the spiritual perspectives and spiritual nursing interventions in two nursing specialties, mental health and parish nursing. The researchers found that both groups reported high spiritual perspective scores and provided a variety of interventions to the patients in their practice. The researchers report that parish nurses, in most instances, intervened twice as frequently as mental health nurses. Tuck, Pullen, and Wallace conclude that a nurse’s recognition of and comfort with his or her own spirituality appears to be a critical factor in him or her providing spiritual care to patients. As noted by Barnum (2003), nursing has strong spiritual roots, which was recognized by important nursing leaders such as Florence Nightingale (1969) and is an important aspect of nursing care. It is clear from the findings of the studies by Narayanasamy (1995) and Tuck, Pullen, and Wallace that more research and education in the area of spirituality is necessary to the provision of adequate nursing care of patients.

Barroso and Powell-Cope (2000) emphasize the crucial importance of qualitative research with PLWHA because the findings from such studies provide direction for practice and research from an emic perspective. The researchers conducted a metasynthesis, using a critique form based on Burns' standard to evaluate the articles viewed in their study, for the purpose of understanding the experience of adults living with HIV infection. Twenty-one articles published between 1990 and 1995 were reviewed. Findings from the 21 studies were examined using constant comparative analysis, and study themes and conceptual categories were identified. There were 307 participants in the studies reviewed; 279 were men and 28 were women. The majority of participants were Caucasian; however, African-American and Hispanic persons also participated in some of the studies.

Barroso and Powell-Cope (2000) identified six overarching metaphors from the metasynthesis, among them were: "(a) finding meaning in HIV/AIDS, (b) shattered meaning, (c) human connectedness" (p. 341). The authors state that for participants in their study, introspection about one's self and life led to new strategies for living; this in turn resulted in an assimilation of HIV-Disease into one's life. The finding most directly related is the process defined as "finding meaning". Barroso and Powell-Cope suggest that finding meaning in HIV/AIDS translated into practical coping mechanisms that were used to: reduce uncertainty, cope with loss, and face death. Finding meaning also frequently translated into assuming a more active and flexible coping stance in existential struggles. The assimilation of one's HIV diagnosis into one's life, one's view of the self,

and one's worldview were also involved in finding meaning. This assimilation allowed people to avoid immersing themselves in panic, dread, and depression.

Another related finding was that some PLWHA viewed religion as a source of hope and a means to cope with the disease. Other studies indicate that spirituality was deepened when people found little solace in organized religion; the spirituality in such cases was expressed as a belief in God or an appreciation for prayer.

In contrast to finding meaning, Barroso and Powell-Cope (2000) found that for some people, living with HIV/AIDS represented an irreparable and massive loss that led to overwhelming fear. They termed this experience, *shattered meaning*. The investigators found that faith, religion, or spirituality offered little comfort when shattered meaning was experienced. Participants who experienced shattered meaning in living with HIV lacked a framework for understanding their disease or their world. The researchers go on to state that PLWHA frequently felt alienated from mainstream religion and were often "bewildered, embittered, and depressed" (p. 345).

Human connectedness was another metaphor that Barroso and Powell-Cope (2000) identified in their study and connectedness has been cited by several researchers (Coyle, 2002; Halstead & Hull, 2001; Hungelmann et al., 1996) as a component of spirituality. Barroso and Powell-Cope found that when PLWHA faced increased alienation and separation from others, they started initiating and sustaining meaningful relationships with friends and family members. The basis of human connectedness was the emotional support given and received as well as a sense of belonging derived from

social interactions. Human connectedness occurred on two levels, one was with the larger community and one was with friends, families, and others.

Two of the categories uncovered by Barroso and Powell-Cope (2000) are significant and directly related to the definitions of spirituality. The most prominent identified metaphor was *finding meaning* in HIV/AIDS and it also had the largest amount of supporting data. Finding meaning represented transcendence and it helped the participants deal with HIV/AIDS on an existential level. Those who were able to find meaning were also able to experience some of the other metaphors such as establishing human connections, focusing on themselves, negotiating health care, and dealing in a positive way with stigma. Conversely, those who had shattered meaning did not experience these other aspects. Instead, they were unable to establish a framework for coping with their disease; they were “mired in hopelessness and despair” (p. 351) and unable to adapt positively to living with HIV-Disease. The authors also discovered that human connectedness acted as a buffer for dealing with the stigma of living with HIV/AIDS.

Barroso and Powell-Cope (2000) close by suggesting that the metasynthesis reveals the consequences of negative adaptation or shattered meaning and reinforce the need to implement holistic models of care. They suggest that qualitative studies focused on particular aspects of living with HIV infection or on certain subpopulations may be warranted in the future.

In 1991, Fryback identified the spiritual domain as one of the three domains of health for a group of informants that included people who had been diagnosed with

HIV/AIDS. She carried out a naturalistic study designed to investigate how terminally ill persons described health. She used a theoretical sampling technique to select 10 informants for the study; 5 were women with cancer and 5 were men with HIV/AIDS.

Fryback (1991) conducted in-depth interviews with the informants. A computer software program, Ethnograph, was used to organize and sort the resulting data. The findings were then content analyzed and the constant comparison method was used to determine meaning. Fryback identified three domains of health that emerged from the process: the physical domain, which consists of the concepts, health promotion, relationships with physician, and feeling good; the spiritual domain, which is made up of a belief in a Higher Power, recognition of mortality, and self-actualization; and the mental/emotional domain, which involves the three concepts of hope, love, and control. The investigator further identified sub-concepts associated with recognizing mortality, which are *attitudes about life* and *attitudes about death*. Self-actualization includes the sub-concepts of *self love/esteem* and *finding meaning*. The sub-concepts associated with love include *love for and of others*, *involvement with others*, and *love of pets*. The concepts of finding meaning (Chiu, 2000; Coyle, 2002; Ferrell et al., 1998; Flannelly et al., 2002; Frankl, 2000; Fryback, & Reinert, 1999; Halstead & Hull, 2001; Hungelmann, et al., 1996) and connection with others (Coyle, 2002; Halstead & Hull, 2001; Hungelmann et al., 1996; Reed, 1991) identified in this study have been identified by other investigators as elements of spirituality, which suggests an interrelation between the three domains. Of particular interest in Fryback's study is the informants' perception that

their disease was a part of their health. The informants believed they had even become healthier as a result of being diagnosed with a terminal illness.

In another study Fryback and Reinert (1999) emphasize that little research has been conducted, which explores the meaning of spirituality as defined by people living with the knowledge of a terminal diagnosis. Based on that assumption they designed a qualitative study to explore the concept of spirituality from the perspective of people living with a potentially terminal diagnosis and to determine how the participants viewed and experienced the concept of health.

The study was conducted at two different times and in two separate states in the southern United States. In-depth interview (duration of 60-90 minutes each) were conducted, audiotaped, and transcribed verbatim with a convenience sample of 15 participants (5 women with cancer and 5 men with HIV/AIDS at site 1; an additional 5 women with cancer were interviewed 3 years later at site 2) who ranged in age from 29-76 years; 13 participants were Caucasian and 2 were African-American. Content analysis was performed throughout data collection to uncover themes.

According to Fryback and Reinert (1999), all 15 participants identified the spiritual as a domain of health with three main concepts: “belief in a higher power, recognition of mortality, and self-actualization” (p. 15). Belief in a higher power included concepts of church attendance/religion, spiritual beliefs, and transcendence. Appreciation of life, appreciation of nature, and living in the moment were associated with recognition of mortality. Self-actualization included the concepts of self-love/acceptance and finding meaning/purpose in life and disease. Fryback and Reinert suggest that spirituality is an

essential component to feelings of health and well-being. “Many of the subjects viewed spirituality as a bridge between hopelessness and meaningfulness in life” (p.13); participants who were able to find meaning in having their disease believed they had a better quality of life at the time of the interviews than before they had been diagnosed with the disease.

The findings from the studies by Fryback (1991) and Fryback and Reinert (1999) make important contributions to the understanding of how healing and spirituality are defined by PLWHA. The results are also similar to those reported by other researchers; however, it is important to note that the study conducted by Fryback and Reinert (1999) included only 15 participants; 75% were women and the majority (86.7%) was Caucasian. This was a limitation of the study. However, the study was conducted with two separate groups from two different sites, which were study strengths.

The meaning and use of spirituality among women with HIV/AIDS was explored in a study conducted by Guillory et al. (1997). A focus group methodology was used to generate data for the investigation. The sample was made up of 45 women from age 20-63 years; 12 (26.6%) of the women were White and 33 (73.3%) were Black. All but 3 (6.6%) of the participants reported being Christian. The participants were at various stages of the disease and were recruited from eight service organizations (five urban and three rural). Eight focus groups took place and each group session lasted approximately 2 hours. Semi-structured interview guides consisting of the following open-ended questions about the experience of living with HIV were used: “(1) What does the term ‘spirituality’ mean to you? (2) Do you believe in a supreme being? (3) How important is spirituality in

your life?” (p. 57). The sessions were audio taped and verbatim transcripts developed. These, along with demographic information and recorded observations, provided the data for the content analysis.

Guillory et al. (1997) report that 76 descriptions of spirituality were generated from the data. “The analysis revealed six major themes: “(1) relationship with a supreme being, (2) prayer and meditation, (3) peace, (4) love, (5) healing, and (6) religiosity” (p. 58). The theme most frequently identified was personal relationship or connectedness with a supreme being. This relationship was associated with a hope to continue living and a faith in one’s self and a higher power. Some of the participants reported a change in their spirituality and spiritual practices since being diagnosed with HIV infection.

The theme of healing as a component of spirituality was expressed in such statements as, “I know God can heal.’ Another participant described her belief that God helped her to remain alive and relatively well despite objective indicators to the contrary” (Guillory et al., 1997, p. 59). The women also reported turning their illness over to God for healing. Participants reported their efforts to seek spiritual healing were focused on organized religious fellowships such as their own church or spiritual group. Participants identified prayer as the practice that was most frequently used in their efforts to seek healing. Overall, Guillory et al. conclude that the participants considered spirituality as an essential part of daily living as well as a part of the healing process of their disease.

The results of the study by Guillory et al. (1997) are important because they substantiate the theory that there is a relationship between spirituality and healing. The findings also highlight the importance of connection, especially with a supreme being.

There are three limitations to the study conducted by Guillory et al. (1997). The first is the fact that approximately 93.4% of the participants were self-identified as being Christian. This fact could certainly account for the findings related to God or a Supreme Being, prayer and meditation, and religiosity being among the six major themes identified in the study. Meisenhelder (2003) found in her study that women rated the importance of their faith and frequency of prayer as being much higher than did men. This raises the question of whether the findings by Guillory et al. are related to the fact that all of the participants were female. The third limitation of the study was the small sample size.

Differences According to Demographic Data

The findings from several studies suggest that spirituality and spiritual practices differ among various population groups. Siegel and Schrimshaw (2000) found that one of the most prevalent kinds of AIDS-related positive changes was an increase in spiritual or religious faith and that Black and Puerto Rican women's reports of religious growth and reliance on their spiritual faith were particularly strong. In a study involving HIV-infected women, Sowell et al. (2000) found that spiritual activities varied significantly ($p = 0.027$) according to annual household income, with the highest mean scores being observed among participants in the low ($\leq \$4,999$) and high ($\geq \$10,000$) income groups. Dunn and Horgas (2000) conducted a study investigating the spiritual practices of community dwelling elders. These authors also found that female and Black participants reported using prayer to cope with stress significantly ($p \leq 0.01$) more often than did male and White participants.

Tarakeshwar, Hansen, Kochman, and Sikkema (2005) had reported similar findings to Dunn and Horgas (2000) in a study conducted with bereaved, HIV-seropositive individuals, using the Ways of Coping Questionnaire and the Coping with Illness Scale. Tarakeshwar et al. examined the influence of gender and ethnicity on the coping strategies of a sample of 252 people (65.1% were male and 71% were ethnic minorities, Black and Hispanic). Factor analyses of the data yielded five coping subscales: Active, Avoidant, Social Support, Self-destructive, and Spiritual. Using multivariate analyses of covariance, significant gender and ethnic group effects on spiritual coping were revealed. There was a greater use of spiritual coping by women and ethnic minorities, whereas White men reported the least use of spiritual coping. It was also noted that White women reported significantly greater use of avoidant coping than did White men. The investigators also found variances across gender and ethnic groups in terms of the relationship between spiritual coping and grief. The researchers state that the findings emphasize the influence of gender and ethnicity in the use of spiritual coping mechanisms as well as the importance of incorporating spirituality in psychosocial interventions.

Tuck and Thinganjana (2007) conducted a study to explore the meaning of spirituality as reported by participants in an intervention study. Participants in the study were asked to respond, first in written form and then verbally, to two questions: (a) What is the meaning of spirituality to you and (b) How important is spirituality to you in your daily life. The group facilitator recorded the responses to these questions using direct quotations as frequently as possible. The principal investigator reviewed the data to

verify its integrity. The data were then content analyzed for the purpose of identifying the major themes and to determine if the definition of spirituality differed according to gender. The participants in that study consisted of both healthy adults ($n = 27$) and PLWHA ($n = 75$). The mean age of the healthy adult sub-sample was 52 years; 52% of them were African-American, and the mean education level was 17 years. There were 24 females and 3 males in the healthy-adult sub-sample. The sub-sample of PLWHA included 28 females and 47 males. The mean age of this sub-sample was 41 years, and 77% were African-American. The mean education level was 12.32 years for the PLWHA group.

The responses of the PLWHA, who were grouped in the interventions by gender, are of significance for this study. Tuck and Thinganjana's (2007) identified six categories in the initial round of content analysis for the female participants in the HIV group:

- (1) Spirituality as a belief in God (a higher power or religion);
- (2) Spirituality as a channel that helps;
- (3) Spirituality as a source;
- (4) Spirituality expressed through actions such as praying, meditating and attending church;
- (5) God is present and giving; and
- (6) Spirituality is my essence or center. (pp. 7-8)

In summary, spirituality was identified as a source of peace, comfort, strength, inspiration, and balance; the majority of the study participants stated that the belief in God was important to the definition of spirituality. On the other hand, five categories were identified for the male participants in the HIV group:

- (1) Dimensions of spirituality—what spirituality is and is not including a belief and relationship to God and religion, connection to nature and a Higher Power;

(2) Spirituality as a channel that guides and helps; (3) Spirituality shapes my being—spirituality feels [sic] and inspires and ‘It makes me feel alive’; (4) Spirituality expressed outwardly through activities done to express and maintain spirituality; and (5) Spirituality is a journey/path to explore life or to explore or ‘be’ the essence of self. (p. 8)

Interestingly, there were five responses among males disavowing any association with religion, which is in contrast to only one such response in the female group.

The data from the two HIV groups of Tuck and Thinganjana’s study (2007) were collapsed into one data set and six categories were identified: “spirituality is relating and believing in God or a Higher Power”; “spirituality is being guided or helped”; “spirituality is being inspired by or given unto”; “spirituality is expressed in outward ways”; “spirituality is journeying, discovering, centering”; and “spirituality is feeling the presence of God” (pp. 9-11).

Tuck and Thinganjana (2007) state that a significant finding in their study was that active and passive views expressed by the participants differed according to gender in the HIV group. The female participants in the HIV group held a more paternalistic view of God than did either the male participants of that group or the participants in the healthy adult group. The most significant finding in the healthy adult sample was the description of an intimate relationship with God. Being helped or guided was more prominent in the HIV-infected sample, indicating that the presence of a chronic or life-threatening disease may affect this category.

Limitations of the study are the research questions, which potentially narrowed the possible responses, and the data were dependant upon investigator recall of the responses. However, the findings are consistent with those of other researchers (Fryback, 1991; Fryback & Reinert, 1999; Guillory et al, 1997; Hall, 1998; Martin, Rissmiller, & Beal, 1995; Sowell et al., 1997).

Bourjolly (1998) conducted a study to examine whether ethnicity was an important factor in the use of religiousness among Black and White women diagnosed with breast cancer. The investigator defines religion as basically a way of life that “involves communion or personal fellowship with God” (p. 22). The study examined preliminary data on those areas in which Black and White women might differ in their coping and functioning with breast cancer and to consider the implications for those possible differences.

A comparative design was used for the study and a convenience sample of participants was recruited from an outpatient radiation oncology department of a large, urban university hospital. The sample included 61 White women and 41 Black women. The researcher used Lazarus and Folkmans’ conceptual model of stress and coping as a guide for the selection of study variables. The tool used to measure religiousness for the study was the two factor Religiousness Scale, which is designed to measure private and public use of religion.

Bourjolly (1998) used *t*-tests to determine if religiousness differed according to ethnicity and found a significant difference between the two groups of women. The Black women scored higher on both public and private religiousness. The investigator

concludes that Black women rely on religiousness as a coping resource to a greater extent than White women do. Bourjolly cautions that variations exist among people of the same racial background and therefore it is inappropriate to make assumptions about one's use of religion. These findings might link religion and spirituality and may have implications for PLWHA.

Another study by Bourjolly and Hirschman (2001) was designed to analyze the differences in coping strategies and use of social support between Black and White women with breast cancer. The study was designed to determine if race predicted differences in these areas and what implications such differences would have for clinical practice. The sample consisted of 102 women (41 Black and 61 White). Participants were interviewed approximately 1 hour each regarding race, age, marital status, number and ages of children living at home, educational level, income, employment status, area of residence, and medical information. The revised Ways of Coping Questionnaire and the abridged version of the Social Network Grid were used to collect information regarding the structure and function of participants' social networks. The findings suggest that both groups sought social support as a means of coping with their disease. However a greater number of White women reported receiving support from their spouse, children, and friends, whereas more Black women reported receiving support from God.

The study findings in both of these articles, although statistically significant, should be interpreted with caution. Of the 102 participants in the later study, only 12 (3 White and 9 African-American) indicated that one of the domains of their social support network was God; this is equal to only 11.8% of the total number of participants. The

religious affiliation of the participants was not addressed in the demographic data, which is another limitation of the studies. Also, the participants were cancer patients and the findings may not be applicable to PLWHA. Clearly, more research is needed in this area.

Meisenhelder (2003) suggests that men and women are frequently treated in similar ways, however gender might have impact upon the effectiveness of different interventions. They conducted a study to examine the possible gender differences in the relationship between three religious variables and functional health of people over the age of 65. The researchers conducted a secondary analysis of community survey data that addressed the associations between the importance of faith, religious coping, frequency of prayer, and eight categories of functional health.

The sample consisted of 135 women and 136 men living in private homes, whose ages ranged from 65-94 years. Ninety-one percent had a high-school level education or above; men were significantly better educated than women. Half of the participants were Protestant and one third were Catholic, only 4% were Jewish and 6% were atheist. Three questions were used to capture religious data: frequency of prayer, representing coping behavior; importance of faith, representing cognitive response; and extent of religious coping, representing cognitive response. Eight health outcomes were measured, including physical functioning, physical limitations to role functioning, extent of bodily pain, general health, vitality or energy level, health limitations to social functioning, emotional limitations to role functioning, and mental health. Forty-one percent of the participants rated the importance of their faith as “a great deal” and 25% reported “quite a bit” important. The scores on the Religious Coping Index were also high, with an average of

61 on a scale of 100. Thirty-one percent indicated rare usage of prayer and 60% indicated daily or more frequent use of prayer.

An important finding in the study is that differences occurred on all three religious variables according to gender. Women rated the importance of their faith and frequency of prayer as being much higher than did the men. Mental health was the only health outcome significantly related to the spiritual variables for both genders. Only the frequency of prayer was significantly correlated with mental health for men. There was also a significant relationship between physical functioning and religious coping for men only. Mental health was related to different religious variables according to gender. The strongest correlation was noted between the importance of faith and better mental health; to a lesser degree, religious coping was positively related to mental health. Those women who scored higher in the area of the importance of faith also scored higher in the area of mental health, even when controlling for education, age, or the extent to which they used their religion to cope.

Meisenhelder (2003) concludes that participant's belief system was associated with mental health, but more so for the female participants than for the male. The men seem to be more behaviorally oriented in that they experience religious benefit from prayer, whereas women apparently benefit more from the cognitive orientation of the significance of their faith. The findings are of particular interest in light of a study by Pullen, Tuck, and Mix (1996), who found a difference in Spiritual Perspective Scores (SPS) according to gender. In their study, slightly lower SPS scores were noted for males as compared to females.

Another factor to consider in regards to spirituality is culture. Conner and Eller (2004) conducted a study with self-identified Christian, African-American participants to identify how spiritual needs and desires might vary by culture, using Reed's (1992) conceptual framework of three dimensions of spirituality (connectedness to God, others, and self). A convenience sample of volunteers recruited from three urban African-American churches located in the metropolitan Newark, New Jersey and New York, New York areas was used. Recruitment sites were Protestant churches with interns in ministry that were known to the researchers. Men and women 18 years old or older were included; the mean age of the participants was 56 years. The majority were Baptist (98%) females (86%).

A demographic questionnaire was used to obtain data and health status was measured using an open-ended question. Qualitative data were content analyzed and Reed's Spiritual Perspective Scale (SPS) was used to measure spiritual views. The question, "When I am hospitalized I have spiritual needs that need to be met" (Conner & Eller, 2004, p. 627) was used to assess spiritual needs. Sixty-six percent of the participants chose "strongly agree" in answer to the question about spiritual needs when hospitalized. Significant correlations were revealed between age and health rating. Significant differences by age were observed for spiritual perspective and spiritual values. Spiritual values also differed significantly by health status, indicating that spiritual values increase as health status worsened. Responses to study questions reflected the three themes of Reed's conceptual model; 50 participants indicated connectedness to God, 37 indicated connectedness to others, and 16 indicated connectedness to self.

Six categories of nursing interventions emerged from the responses to the question regarding the things nurses could do to help meet spiritual needs: participate in spiritual activities ($n = 41$), demonstrate caring qualities/characteristics ($n = 27$), provide comforting measures ($n = 13$), provide reassurance ($n = 9$), recognition of a spiritual caregiver role ($n = 7$), and incorporate diversity in care ($n = 3$). These findings support the importance of spiritual care by nurses as reported in the previously cited studies (Tuck, Pullen, and Wallace, 2001; Narayanasamy, 1995).

The study findings are limited by gender and one Christian denomination. This fact greatly limits the applicability of the findings to the larger population of African-Americans. The investigators did not compare their findings to those found in similar studies of different racial/ethnic groups. The sample was drawn from a Northern metropolitan population and therefore does not necessarily reflect the characteristics and desires of persons living in other geographical locations (refer to Tuck, Pullen, and Wallace, 2001).

Another study was conducted, which examined culture and spirituality in breast cancer patients. Chiu (2000) states that the current nursing literature tends to portray spirituality from a Western perspective. The purpose of the exploratory study was to investigate and describe spirituality as the lived experience of women with breast cancer in Taiwan. Fifteen 27 to 55 year-old women from the Taichung area of Taiwan with different stages of breast cancer participated in the study. Religious orientations of the participants included Buddhism ($n = 7$), Taoism ($n = 2$), Christianity ($n = 4$), and no religion ($n = 2$).

Thematic analysis of the data revealed 4 themes and 12 sub-themes. The themes were conceptualized under a meta-theme, *hsin*, which was translated as “mind” and “heart”. Study participants experienced spirituality as a journey and an evolving, unidirectional process; the participants experienced the journey at different levels of integration and wholeness.

Chiu (2001) cautions “client’s [sic] spirituality may be determined entirely by cultural norms, by behaviors that are in opposition to the cultural norms, or by both of these norms and the life experiences of individuals” (p. 176). Because of this proposed theory, she conducted another study to investigate cultural-spiritual resources that were available to 15 Chinese immigrants living in the U.S. who had been diagnosed with breast cancer. The immigrants were born in Taiwan, Mainland China, or Hong Kong and had immigrated to the U.S. during adulthood. A synthesis of ethnographic and phenomenological research approaches was used to implement the study. Data were collected using interviews, observation of participants, document analysis, and field notes.

Chiu (2001) defined spirituality as “the state of being harmonious with self, others, Nature and the transcendent” (p. 176). Spiritual resource was defined as both inward and outward resources, which support one’s spirituality and enable one to cope with adverse circumstances. Data analysis revealed six cultural themes. Participants experienced their spiritual resource through family closeness; traditional Chinese values; religion; alternative therapy; art, prose, and literature; and Chinese support groups.

In both of the studies, Chiu (2000, 2001) explored cultural-spiritual resources only in Chinese and Taiwanese women. Participants in the 2000 study lived in the Taichung area of Taiwan and in the participants in the 2001 study resided in two U.S. cities, New York and San Francisco. Chiu did not give examples of how the findings differed from those in studies conducted from a Western perspective. Additional research involving participants of other cultural backgrounds and in a variety of geographic locations are needed for a broader perspective regarding the cultural-spiritual resources available to persons experiencing life-threatening diseases.

Tongprateep (2000) conducted a qualitative study to explore the essential elements of spirituality among 12 Buddhist elders (6 men and 6 women) living in the central part of Thailand. One *wat*, or monastery, was selected through a random sampling technique from three wats in the district. Participants were selected from individuals who came to participate in merit making. Merit making refers to the way that Buddhists provide food or other necessities for monks; the main objective of merit making is to eliminate selfishness and greed. A personal data sheet and an open-ended interview guide were used to collect data. Participants were met on four different occasions and interviews lasted an average of 45 minutes each. Validations of the transcripts were done in a final meeting 1-month after the interviews. Hermeneutic analysis of the interview data yielded three categories (spiritual beliefs, religious practices, and consequences of spirituality) and nine themes. The law of karma and life after death were two spiritual belief themes. Four themes in the religious practice category were: merit making, observance of moral precepts, gratitude and caring in the family, and meditation. The

three themes in the consequences of spirituality category included: coping with the vicissitudes of life, being hopeful, and having a peaceful mind. Spirituality acted as the motivating force for the participants' feelings, thoughts, perceptions, and expressions through their Buddhist religious beliefs. Participants experienced both positive and negative life events, with the passage of time. Such life events brought realization of the law of karma and other Buddhist doctrines.

Spiritual Needs and Nursing Care

Several studies have explored the spiritual needs of critically ill patients and the nursing care related to those needs. Depalo (1997) conducted a descriptive, exploratory, quantitative study with 65 self-identified gay men who had a diagnosis of AIDS. The mean age of the participants was 34.9 years; the ethnicity was White (58.5%), Hispanic (24.5%), Black (10.8%), Asian (3.1%), and American Indian (3.1%). The demographic data revealed that the religious affiliations represented were Catholic (56.9%), Jewish (7.75%), Protestant (10.8%), other (18.4%), and none (6.2%). The study examined the correlations between spirituality and coping skills, feelings of hopelessness, and death and dying issues. The Spirituality Assessment Scale (SAS), the Hopelessness Scale (HS), the Dealing with Illness Inventory (DWI), and the Multidimensional Fear of Death Scale (MFODS) were used to collect data. A demographic questionnaire also addressed alternative healing techniques employed by participants. Data were analyzed using Pearson correlations, descriptive statistics, Dunn-Bonferroni correction, and multiple regression analysis.

The relationship between active-cognitive dealing with illness style and spirituality was the strongest relationship noted ($r = .76, p \leq .01$). There was a significant negative relationship between spirituality and the avoidant dealing with illness focused coping style ($r = .59, p \leq .01$) and a significant inverse relationship between the scores on the SAS and hopelessness ($r = -.39, p \leq .01$) scales; lower feelings of hopelessness were associated with higher overall spirituality. The correlation between the SAS and the total MFODS was not statistically significant. However, there were significant correlations between SAS and “fear of dying ($r = -.42, p = .0002$); fear for significant others ($r = -.33, p = .008$); and fear of conscious death ($r = -.35, p = .006$)” (Depalo, 1997, p. 125).

The findings of this study are important because they support Depalo’s (1997) hypothesis that spirituality is an important element in the emotional adjustment process for gay men with AIDS. Data analyses indicated that spirituality was significantly correlated with the ability to cope with stress. Furthermore, spiritual growth may result from lowered hopelessness and more effective coping. Perhaps as the disease progresses and individuals begin to accept their diagnosis, a more mature and effective form of spirituality develops in gay men with AIDS.

The small sample size and the exclusion of diverse population groups were limitations of Depalo’s study (1997). Longitudinal studies that measure the same variables at different points during the disease process could also reveal valuable information regarding possible changes that may occur during the course of HIV-Disease.

A triangulated study using qualitative data along with the same quantitative variables might provide further elucidation regarding the role of spirituality in living with AIDS.

Another study with PLWHA was conducted by Martin et al. (1995), who contend that people of Haitian descent have their own distinctive health-illness beliefs and practices; the researchers suspect those beliefs and practices may be in conflict with those of modern healthcare providers. They conducted a qualitative study to explore the health-illness beliefs and practices of Haitians with HIV-Disease living in Boston.

An interview guide that included 19 open-ended and closed questions was used to collect data. Reliability of the guide was established by peer debriefing with faculty members and colleagues who worked in the area of HIV/AIDS. The purposive sample (9 Haitians, 5 men and 4 women) was obtained from an HIV clinic at an urban hospital in Boston, Massachusetts; ages ranged from 33-62 years with a mean age of 45.6 years. Informants' knowledge of their HIV status ranged from 4 months to 5 years. "Leininger's (1991) Phases of Ethnonursing Analysis for Qualitative Data" (Martin et al., 1995, p. 47) was used to analyze the data from the semi-structured interviews, which lasted approximately 90-minutes each. Five themes emerged from the content analysis; one of those themes was that spirituality was used to help cope with HIV-Disease.

Each of the informants in the study reported at least one spiritual practice that had been used to assist with coping with their disease. The spiritual practices consisted of attending church services and prayer (the most frequently reported practice), listening to a tape of religious prayer and religious songs, singing in a choir, Bible study, attending a charismatic prayer group, and having a prayer group visit at their home. One female

participant stated that having HIV-Disease, ““is a *malediction*. God sends sickness to people who do bad things”” (Martin et al., 1995, p. 47). Only one participant reported not being very religious. Participants found strength in their belief in God and their religious institutions when faced with HIV-Disease and all of its ramifications.

The findings of the study support the findings of Pargament, Koenig, and Perez (2000) and Pargament, McCarthy, Shah et al. (2004) regarding religious coping, which are discussed on page 167. A limitation to the study by Martin et al. (1995) is the usage of field notes alone as a data resource and not audio taping the interviews. Relying on an interpreter for conducting the interviews with 8 of the participants also was a limitation to the study. The combination of these two techniques could have a great impact on the authenticity of the data. The religious background or affiliation was not addressed in the collection of the demographic data making it difficult to determine what if any impact these factors may have had on the beliefs and practices of the informant.

Because of the paucity of studies found that involved PLWHA, other studies involving people with life-threatening diseases are discussed in this section. It is acknowledged that the findings from such studies may not be applicable to PLWHA because of the stigma frequently associated with having HIV-Disease.

Taylor (2003) conducted a qualitative study to describe the spiritual needs experienced in living with cancer from the perspective of patients and family caregivers recruited from inpatient units and outpatient chemotherapy clinics in a county hospital and a comprehensive cancer center located in a large southwestern metropolitan area. Twenty-three informants, who were of either Euro-American or African-American

descent, were 18 years old or older, and were a current recipient of nursing care, participated. Informants were from diverse religious or philosophical backgrounds; 21 were patients and 7 were family caregivers. Ten patients were male and 6 were African-American. The religious affiliation consisted of Protestant ($n = 14$), Roman Catholic ($n = 6$), Jewish ($n = 5$), Mormon ($n = 1$), and 2 reported no religious affiliation. Nine informants reported attending religious services a minimum of once every week and 13 reported they rarely or never attended.

When the initial question about having spiritual needs was asked, several informants immediately and overtly denied having any while some had an immediate awareness of their spiritual needs. Some participants responded to the initial question by stating they didn't understand the question or requested that the term "spiritual need" be defined for them and several interpreted the term spiritual as religious. Seven categories of spiritual needs were revealed: (a) needs associated with relating to an Ultimate Other; (b) needs for positivity, gratitude, and hope; (c) need to give and receive love from other persons; (d) need to review beliefs; (e) needs related to creating meaning; (f) needs related to finding purpose; (g) religious needs; and (h) needs related to preparing for death. These findings are similar to those in the study by Conner and Eller (2004), discussed on page 49.

Themes extracted from data collected from African-American informants were compared with those of the Euro-Americans and some differences were evident. The African-American informants were predominantly Baptists and entertained a causal relation between having cancer and "sin" more frequently than did the Euro-Americans.

They also more frequently described the necessity of believing that God could cure their cancer if they maintained enough faith and prayed. These informants were also more reticent about reviewing their spiritual beliefs and in the words of one patient, “I don’t question God. Never” (Taylor, 2003, p. 264).

The study findings lend support to the statements about the lack of clarity regarding the term spirituality (Barnum, 2003; Martsof & Mickley, 1998; Tuck, 2004). Taylor admits that frequently investigators may approach an interview with language, assumptions, and experiences that differ from that of the informants and therefore may cause them to have difficulty describing their spiritual needs. Taylor suggests that the most useful approach is to listen to the informant’s use of words related to spiritual matters and use those same terms when discussing spiritual matters with the participants. She also suggests that informants may need time to feel comfortable talking about such an intimate topic.

Another study explored the nature of spiritual care according to the perspective of the ill recipient during hospitalization. Ten Caucasian, Christian informants (3 men and 7 women) participated in the study by Conco (1995); the ages ranged from 35 to 86 years and the time of hospitalization varied from 2 weeks to several years. Data were collected from audio taped interviews and field notes recorded observations of nonverbal behaviors and responses.

Ministers, family members, friends, nurses, doctors, nonprofessional hospital personnel, and visitors were identified as spiritual caregivers. Spiritual care was important to participants’ ability to cope with illness and to their recovery; some even felt

it was the primary factor that brought them through their experience. Positive outcomes associated with spiritual care were a sense of peace, a reduction in feelings of anxiety, increased comfort, inner strength, a sense of hopefulness, calmness, feelings of acceptance, general well-being, positive changes in attitude and outlook on life, and a stronger faith. Three themes identified were: (a) enabling the recipient to transcend the present circumstances for higher meaning and purpose, (b) enabling the recipient to experience hope, and (c) “establishing *connectedness* with the recipient” (Conco, 1995, p. 271).

From the recipient’s perspective, “spiritual care is given and received in a context in which the recipient is physically and/or emotionally vulnerable and receptive to spiritual perspective and care” (Conco, 1995, p. 273). By showing concern or through sharing common experiences and/or similar spiritual beliefs people are able to establish connectedness with the recipient and thus spiritual care is given. Enabling transcendence of the present situation for higher meaning and purpose, enabling hope, and establishing connectedness make up the content of spiritual care. Informants believed the God of their Christian faith played a significant role in spiritual care. They perceived that spiritual care was being rendered when caregivers shared their own beliefs in a supreme being as a source of comfort and strength. Spiritual care was associated with religious beliefs and religion offered meaning, purpose, and hope. The findings from this study are very similar to the ones previously cited. Furthermore, it emphasizes the importance of connectedness between the patient and the health care provider and that vulnerability on

the part of the patient during illness is an important factor in their receptivity to spiritual care.

Investigators Fins, Guest, and Acres (2000) conducted an interpretative narrative analysis to examine the medical records of 200 adult deaths at their institution. Among the prominent topics that emerged from their review was the influence of spirituality on the course of care. Two abstractors, trained in ethical and end-of-life care, conducted retrospective reviews on the medical records of 200 out of 205 consecutive adult deaths that occurred during the first 4 months of 1996 at the New York Hospital-Cornell Medical Center. An 82-item chart abstraction instrument designed to elicit information for the study (mean inter-observer reliability of 91%) was used to gather data. Two of the authors read through the entire set of narratives, independently of the abstractors and identified themes that emerged. The abstractors noted only rare documentation of religious and spiritual dimensions of end-of-life care despite the importance of those dimensions. Only two pastoral care interventions were cited; documentation regarding religious beliefs was rare and sometimes reflected the staff's frustration with unrealistic expectations of the patient or family.

The findings are particularly important in light of those previously cited and support the observation that spiritual needs of patients are not being addressed. However, it is important to note that the medical records of the patients were the primary source of data and not the explicit views of the patient or family members involved in the study. The data may not accurately reflect the quality of care or the experiences of the patients and family members.

Findings from another study support the theory that spirituality is important in coping with stress. Dunn and Horgas (2000) conducted a cross-sectional, descriptive study for the purpose of: (a) investigating whether elders report using prayer as a coping strategy, (b) examining how frequently and what type of spiritual treatment modalities are used by elders, and (c) determining if there is a relationship between spiritual treatment modalities and coping. The convenience sample of 50 community-dwelling elders had a mean age of 74 years and was recruited from one church and six senior centers located in a racially diverse, large metropolitan city in the Midwest. Nearly one half were White, Catholic, and widowed (48 %); 52% were Black , 46% were Protestant, 70% were female, and 34% were married. The Jalowiec Coping Scale was used to measure strategies employed to cope with stress. Participants were also requested to indicate how frequently any of 32 complementary or alternative health treatments were used. The list of treatments included energy healing, prayer, and meditation. Responses were rated using an investigator-developed, 4-point Likert-type scale (Chronbach's alpha = .86) that ranged from 0 = *never used* to 3 = *often used*.

Prayer was used to cope with stress by 96 % of the participants; no difference in the prevalence was noted related to income, marital status, religious affiliation, or age. Prayer was the most frequently reported complementary or alternative treatment (84 %) and meditation was reported at 32 %. Women and Black participants used prayer to cope with stress significantly ($p \leq .01$) more often than did men and White participants. There were significant positive correlations between the use of prayer as a coping strategy and the optimistic and self-reliant coping styles ($p = .02$ and $.03$, respectively). Significant

positive correlation between the total number of spiritual treatment modalities used and evasive, optimistic, palliative, supportive, self-reliant, and total mean coping scores were revealed. Forty-four percent of the participants were recruited from a church, which may have had impact on the findings; however, post hoc analyses revealed, of those who reported the frequent use of prayer, only 38 % were from the church sample.

Spirituality and Healing

The relationship between spirituality and healing is of paramount importance. Sowell et al. (2000) conducted a longitudinal study of HIV-infected women ($n = 264$) and family members from eight rural and urban HIV/AIDS treatment sites in Georgia, to examine the role spiritual activities play in reducing the negative effects of HIV-Disease. Variables of interest were measured during the fourth and fifth interviews of the study, which were conducted 9 and 12 months after entry into a larger study. Participants ($n = 184$) who completed both the fourth and fifth interviews made up the sub-sample for the analysis; participants were 15 years or older and had no diagnosis of dementia. The mean age was 34 years, with a range of 15-59 years; 75% were single, 84.2 % were African-American, (61%) had completed high school or had advanced education, and 68.5% resided in urban areas. The mean annual household income for 74% was less than \$10,000.

Interviews were conducted at the clinic or another mutually agreed upon site and lasted approximately 1.5-2 hours each; \$30 was given at the completion of the interviews. Some of the scales used in the analysis of the data were developed and/or validated

during the formative stage of the study; the data for the scales were collected from focus groups and open-ended questions included in the early interviews. A confirmatory factor analysis/structural equation modeling with the program AMOS was used to test the researcher-developed model. Spiritual activities varied significantly ($p = 0.027$) according to annual household income with participants in the low- ($\leq \$4,999$) and high-income ($\geq \$10,000$) categories having higher mean spiritual activity scores than those in the middle-range income category.

Two structural equation models were tested in order to assess the effects of spiritual activities on the relationship between HIV-related stressors and adaptational outcomes. A significant negative relationship was noted between spiritual activities and emotional distress, even when the presence of HIV-related stressors was controlled. The research findings demonstrate a protective mechanism of spiritual activities against emotional distress in the presence of disease-related stressors. The findings provide further support for the theory that spirituality is a resistance resource in the stress and coping process for PLWHA.

One of the most glaring limitations of this study is the lack of demographic information regarding the religious affiliation of participants. Such information, had it been included in the correlational analyses, could have given valuable insight into the possible role of religious affiliation and the other variables. The sub-sample of the study was comprised of 84% African-American women and this ethnic skewing of the sample may also have had an impact on the findings. According to Coleman and Holzemer (1999), African-Americans have historically relied on their churches as spiritual

resources and their contribution to psychological well-being would be beneficial within the context of living with HIV-Disease.

Coleman and Holzemer (1999) conducted a descriptive cross-sectional study to explore what contribution spiritual well-being and HIV symptoms made to psychological well-being in a convenience sample of 117 African-American men (79.5%), women (16.2%), and transgender (4.3%) persons living with HIV-Disease; psychological well-being indicators were depression, hope, and state-trait anxiety. Participants were from HIV clinics and community-based AIDS service organization located in Oakland and Los Angeles, California. A majority (94%) had an education level of high school or above and 76% reported annual incomes lower than \$10,000. Independent variables were measured by the sociodemographic questionnaire and included age, education, gender, income, marital status, substance use, spiritual development, and sexual orientation. Instruments used were the sociodemographic questionnaire (developed by the first author and previously tested with a sample of similar participants), the HIV Sign and Symptom Checklist for Persons With HIV-Disease, and the Spiritual Well-Being Scale. Depression, hope, and state-trait anxiety represented the dependent variable, psychological well-being. The Beck Depression Inventory, State-Trait Anxiety Inventory, and the Nowotny Hope Scale were used to measure psychological well-being. Descriptive and correlational analyses were performed on all the variables.

HIV seropositivity or having AIDS did not significantly contribute to differences in scores on scales measuring depression, hope, and state-trait anxiety. A surprising finding was that heterosexual participants reported more depression, more anxiety, and

less hope than non-heterosexual participants. Existential Well-Being (EWB) and HIV symptoms were significantly correlated with the four components of psychological well-being and explained 55% of the variance. There were no significant findings related to the sociodemographic variables. The findings are important in that they highlight the critical contribution that spirituality, as measured by the EWB scale, makes towards the psychological health of PLWHA.

A later article by Coleman (2003a) examined the relationships among spirituality, sexual orientation, mental well-being, and aspects of functional health status (physical, role, social, and cognitive functioning) in a sample of 117 African-American men and women. The study instruments were: a sociodemographic questionnaire; the Spiritual Well-Being Scale (SWBS) with its two sub-scales, Religious Well-Being (RWB) and EWB; the HIV Sign and Symptom Check-List for Persons with HIV Disease; and the Medical Outcome Study-30. Ninety-eight (84%) participants were male, 19 (16%) were females; 49 (42%) were self-described as heterosexual, 44 (38%) as homosexual, and 24 (20%) as bisexual; the mean age was 38 years. Fifty-six (45%) reported they attended church on a regular basis and 60 (51%) stated that doing so had been an influential spiritual activity. EWB had a low but positive correlation (ranging from .24-.40) with cognitive functioning, social functioning, and mental well-being. RWB had a significant association (ranging from .20-.27) with cognitive and social functioning.

The target populations of Coleman and Holzemer's study (1999) and Coleman's study (2003a) were African-Americans, which may limit the transferability of the study findings. The majority of the participants in both studies were male and this, according to

the study findings of Meisenhelder (2003), may also have had an influence on the results of the study (refer to page 41).

A third study by Coleman (2004) was done with 49 heterosexual African-American men and women (a subset of the above sample) for the purpose of examining the contribution of RWB and EWB to the mental health of African-American heterosexuals who were HIV Seropositive or had AIDS. Coleman used a questionnaire to measure background characteristics, spiritual well-being, and depression. Independent variables were age, education, sex, and existential and religious well-being. The Beck Depression Inventory was used to measure the dependent variable.

Twenty-seven (55.1%) of the informants were Baptist, 37 (76%) attended some type of religious services, 12 (24%) were female, 37 (76%) were male, and the mean age was 41 years. Mean scores suggested the participants were experiencing moderate to severe depression. RWB scores were higher than EWB scores; both higher EWB and higher RWB scores were correlated with lower depression scores. The two predictors explained 32% of the variance in depression and were statistically significant. The findings from this analysis differed from the data derived from the large sample; it was EWB in that analysis that predicted depression scores. However, all of the studies conducted by Coleman (2003a, 2004) and Coleman and Holzemer (1999) demonstrate the crucial contribution that spirituality makes to mental health. A large proportion (76%) of the participants in Coleman's (2004) study were self-identified as Baptist. Further study is needed in order to determine what if any impact this religious affiliation may have had on the findings of the study.

Use of injectable drugs has been recognized as risk factor associated with the spread of HIV-Disease. Avants et al. (2001) examined the association between support and comfort derived from religion or spirituality and abstinence from illicit drugs in a sample of 43 HIV-positive injection drug users entering a 6-month duration methadone maintenance program. Participants were in various stages of HIV-Disease; 30 (69.8%) were male, 17 (39.5%) were White, 21 (48.8%) were African-American, and 5 (11.6%) were Hispanic; the mean age was 42.3 years ($SD = 6.1$). All participants were current heavy users of heroin (intravenous) and cocaine; 67.4% used cocaine by injection.

Patients were asked to rate, on a 5-point scale, the degree to which religion or spirituality personally provided him or her with a source of comfort or support. Thirteen percent of patients responded 0—not at all; 16% replied 1—slightly; 13% replied 2—moderately; 27% replied 3—a lot; and 26% responded 4—extremely. Patients who rated the item as 3 or more ($n = 22$) were rated as High Spiritual Support (HSS) and those who rated the item as 2 or less ($n = 21$) were rated as Low Spiritual Support (LSS). The item was repeated 6 months later with no statistically significant change in the scores from pretreatment to retest.

Study findings were significant because they indicate that perceived spiritual comfort and support at entry into treatment program was an independent predictor of abstinence from illicit drug use by HIV-seropositive injection drug users during methadone maintenance treatment. It was a better predictor of treatment outcome than pretreatment severity of addiction, medical or psychiatric problems, optimism, or social support. A single item was used to assess spiritual support and the study was not designed

to elucidate what specific aspects of religious or spiritual support were beneficial for patients. This could be an important focus for future research in the area of what contributions spirituality and religiousness play in injection drug addiction treatment for PLWHA.

Sowell et al. (1997) explored the use of self-care activities by 27 women diagnosed with HIV-Disease; severity of illness varied widely. Any self-initiated activities used as mechanisms to maintain health identified by the participants were defined as self-care activities. Four focus groups (duration approximately 2 hours each) were conducted in four HIV service organizations located in the southeastern United States, using semi-structured interview guides consisting of open-ended questions about HIV-Disease related experiences. Twenty-one (77.7%) participants were African-American, 5 (18.5%) were White, and 1 (3.7%) did not indicate a race; ages ranged from 27-63 years.

Data for analysis were derived from verbatim transcripts, observational notes, and demographic data and were content analyzed for identification of major categories of self-care activities. A total of 101 individual descriptions of self-care activities were generated. Seven distinct categories of self-care activities were identified with spiritual reliance and rituals being among them. A relationship with a “higher being” was an important aspect of promoting and maintaining a sense of well-being for many of the participants. The reported used of spirituality or reliance on a higher power to maintain health was consistent across all four focus groups for both African-American and Caucasian participants. Efforts to gain spiritual healing were based primarily on

organized religion and the participant's particular church. Prayer was the practice most frequently reported. These findings are consistent with previous studies findings, which indicate that spirituality and religion are used to help cope with HIV-Disease.

Siegel and Schrimshaw (2000) examined the perceptions of illness-related positive change or stress-related growth among 54 African-American, Puerto Rican, and non-Hispanic White women who had a diagnosis of HIV-Disease or AIDS. Growth was defined as, "the process of attaining and maintaining one or more perceived positive outcomes that are attributed to or occur in response to a severe stress experience" (p. 1544).

Participants were recruited from the New York City area and ages ranged from 20 to 45 years (mean age = 35.9). Latino participants were limited to those of Puerto Rican descent (of any race) who had lived on the mainland for at least 4 years. African-American or White participants were limited to those who were native-born and non-Hispanic. A quota sampling techniques were used to obtain approximately equal numbers of African-American ($n = 48$), White ($n = 48$), and Puerto Rican ($n = 50$) participants for the study; a sub-sample of the larger group ($n = 54$) was used for the study discussed in this article. Thirty-four percent were African-American, 32% were Puerto Rican, and 34% were non-Hispanic White women. Participants met three times with a female clinical interviewer within a 1-month period; each audio taped interview lasted approximately 2 hours. Verbatim interview transcriptions were analyzed thematically. Over 83% of participants reported at least one positive change attributed to HIV/AIDS and the majority reported multiple positive changes.

One of the most prevalent kinds of AIDS-related positive changes reported was greater spiritual or religious faith. Many participants related that the diagnosis of HIV/AIDS had motivated them to find meaning in the illness experience or to obtain spiritual support to assist in coping with the illness by returning to their “long neglected religious roots” (Siegel & Schrimshaw, 2000, p. 1548). Those participants who indicated they had been somewhat religious prior to learning of their diagnosis shared a belief that their diagnosis had led to a deepening or intensification of their faith. Some appeared to be seeking forgiveness for earlier behaviors in hopes that by growing closer to God, “they would find a sense of peace and change at redemption” (p. 1548). Frequently the religious or spiritual growth came about only after a period in which the diagnosis had led them to question their faith. Participants viewed HIV/AIDS triggered spiritual or religious growth as a positive change in their lives and as an effective coping resource in dealing with the negative aspects of their illness. Black and Puerto Rican women were particularly strong in their reports of reliance upon spiritual faith and religious growth.

No differences were revealed in the prevalence of growth between various demographic groups including race or ethnicity. There were important differences noted as to what forms of growth were reported, with African-American and Puerto Rican women more likely to report spiritual changes than the non-Hispanic White participants. A significant finding of the study was that it is possible for growth to take place concurrently with the stressor of living with HIV/AIDS. Study participants perceived positive change taking place not only while the stressor was still ongoing but perhaps more significantly, even as their health deteriorated. This is an important area for future

research and some of the questions that should be explored further are: what specific types of spiritual changes occur; do these changes have impact on physical health status and if so, what kind of impact; what, if any impact does the period of faith questioning have upon one's psychological and physical health.

Siegel and Schrimshaw (2000) acknowledge that corroborating reports of positive changes are needed in order to support the perceptions of the participants. A primary strength of the study is that there were equally proportionate numbers of the three ethnic groups represented. However, more studies involving larger numbers of participants from other cultural/ethnic backgrounds are needed to determine if there are culturally relevant factors involved in spiritual growth in women living with HIV/AIDS.

Gray and Cason (2002) explored the relationships between stressors, stress management resources, and mastery over stress to understand how a convenience sample of 80 women with HIV-Disease coped with the associated stressors. Participants were English speaking adults, 18 years of age or older. Lazarus and Folkman's cognitive transaction theory of stress and Younger's theory of mastery over stress provided the conceptual framework and were used as guides for variable selection. Stressors measured were: perceived stress intensity, interpersonal conflict, and severity of disease. Social support, support networks, spiritual perspective, and demographic factors of education and income were the resources measured. Three research questions were explored: (a) to what extent do HIV-infected women experience mastery over stress, (b) what are the relationships between stressors, resources for coping with illness, and mastery over stress

in HIV-infected women, (c) given that significant relationships are present, which stress and resource variables are predictive of mastery over stress.

The study instruments used were the: Mastery Over Stress Instrument (MSI), Interpersonal Relationships Inventory (IPRI), Spiritual Perspective Scale (SPS), Medical Outcomes Study Short-Form (SF-20) Health Survey, and a demographic questionnaire (education, income, age, marital status, ethnicity, means of HIV infection, length of illness, and list of infections experienced since HIV diagnosis [this was used as a rough indication of illness severity]). Data were collected in 16 cities in 10 states; the majority of the participants lived in Dallas, Fort Worth, Houston, and Atlanta. Recruitment took place at numerous sites including hospitals, clinics, doctors' offices, community agencies, and support group settings. Fifty percent of the informants were women of color (Hispanic, Black, or mixed) and ages ranged from 20 to 65 years (mean = 35.8 years). Heterosexual contact was the most frequently reported (57.5%) mode of disease transmission. The average stress score ($M = 3.0$, $SD = .86$) was slightly higher than that of healthy and ill adults who had responded to a longer version of the MSI ($M = 2.45$, $SD = .73$). SPS scores were also slightly higher than low-income women with HIV-Disease in an earlier study, done prior to the introduction of successful drug therapies. Women with life-threatening illnesses tended to have higher SPS scores than did male participants of previous studies; the most frequently reported spiritual activities were prayer and meditation. Forgiveness was reported as an important part of spirituality ($M = 5.25$, $SD = 1.09$).

Twenty-nine (36%) participants had MSI item means of over 4.0, indicative of effective responses to stress, resulting in mastery over stress. Mastery over stress had a significant positive, strong correlation with social support ($p < .001$) and significant moderate correlations with spiritual perspective ($p < .01$) and physical functioning ($p < .01$); social support ($t = 6.85, p = .0001$) and spiritual perspective ($t = 2.71, p = .008$) were significant predictors of mastery over stress and explained 45% of the variance. Results indicate that women with HIV-Disease who have high levels of social support and high spiritual perspective are more likely to experience mastery over stress. This study is important because it suggests that one's spiritual perspective is an important factor in coping with HIV-Disease.

Women in the study reported higher levels of perceived stress intensity, mastery over stress, social support, interpersonal conflict, and spiritual perspective than published reports for samples composed of men or of both men and women. The investigators caution that research findings of high levels of stress have been associated with less social support and with disease progression in men and suggest that further research is needed to enhance understanding of gender differences as they relate to mastery over stress, social support, and spiritual perspective.

Nelson, Rosenfeld, Breitbart, and Galietta (2002) explored what impact spirituality and religiosity had on the severity of depressive symptoms in 162 patients terminally ill with cancer ($n = 84$) or AIDS ($n = 78$), recruited from several palliative care units of institutions in the New York City metropolitan area. Study hypotheses were: participants who were more "spiritual", would have lower levels of depression even when

other psychological, social, and medical factors were taken into account and there would be no significant relationship between depression and religiosity (described as religious beliefs and practices) independent of spirituality.

The average age of cancer participants was 59.8 years; 40% were male and 60% were female; 58 (70%) were White, 19 (23%) were Black, and 6 (7%) were Hispanic; the racial background was missing for 1 subject. The majority were Catholic (49%) and Baptist (8%); 12 participants indicated other religious affiliations and 2 indicated no religious affiliation. Data were missing for 1 of the informants. The average age for AIDS participants was 44 years; 78% were male and 22% were female; 23% were White, 46% Black; 14% Hispanic, and 17% of mixed racial backgrounds. Forty-nine percent were Catholic, 18% Baptist, 6% Protestant, and 5% Jewish; 6 subjects claimed other religious affiliations and 8 indicated no religious affiliation; religious data were missing for 1 subject.

Cognitive screening tests were conducted to demonstrate appropriateness for inclusion in the study. The Functional Assessment of Cancer Therapy (FACIT) Spiritual Well-Being Scale was the primary independent variable; the instrument is a 12-item measure, which had been developed and validated in a large sample of medically ill patients. FACIT generates an over-all measure of spirituality and has two subscales; one sub-scales corresponds to one's sense of meaning and purpose in life and the second measures faith. The Hamilton Depression Rating Scale (HDRS) was the primary dependent variable for the study. Physical well-being was measured using the Brief Pain Inventory, the Karnofsky Performance Rating Scale, and the Memorial Symptom

Assessment Scale. The Duke-UNC Functional Social Support Questionnaire was also included. Religiosity was measured by asking participants if he or she considered him or herself a religious person and how often did he or she attend religious services; answers to the two questions were summed to yield an index of religiosity. Participants also rated how “spiritual” they considered themselves to be.

Coefficient alpha for the two-item religiosity scale was only 0.59, whereas that for the 12-item FACIT was 0.87. There was a negative association between spirituality and depression (more spiritual individuals demonstrating lower levels of depressive symptoms) and a strong negative association between depression and the meaning/peace subscale of the FACIT. Findings suggest that beneficial aspect of spirituality may be associated primarily with a person’s ability to search internally for strength and meaning and to place illness in a broader context and accept circumstances.

The authors separated the constructs of spirituality and religiosity empirically and used different measures for each. However, there may be considerable overlap between the two; for some individuals spirituality and religiosity may be two separate constructs, although many people may be both spiritual and religious. The investigators also acknowledge a discrepancy between their measures of spirituality and religiosity; the measure of spiritual well-being was well validated but the religiosity index was considerably less robust. Because the FACIT Spiritual Well-Being scale measures spiritual well-being rather than spirituality per se, it is still unclear which of the constructs provides a buffer against depression. The authors contend the most significant potential confound was the conceptual overlap between the primary independent

(FACIT) and dependent variables (depression). The findings, in view of the limitations, highlight the need for additional study in the area of spirituality, religion, and depression in people terminally ill with AIDS.

Tuck, McCain, and Elswick (2001) conducted a pilot study, using the cognitive-transactional model of stress within the psychoneuroimmunology (PNI) paradigm, to examine the relationships among spirituality and psychosocial factors and to determine which of three spirituality measures would most effectively reflect those relationships, in 52 male participants living with HIV-Disease. The study hypotheses stated that spirituality measures would be: (a) positively related to both quality of life and social support and (b) inversely related to both illness-related psychological distress and perceived stress. Baseline data collected for a spirituality intervention pilot study (using a quasi-experimental time series design) were used. Data were collected upon admission to the study, after completion of an 8-week spiritual intervention, and a third time at a 6-month follow-up appointment. Participants were required to be at least 18 years old, able to read and speak English, and deemed physically capable of attending the intervention and follow-up requirements as evidenced by a Karnofsky performance score of at least 60. Demographic data regarding age, race, and marital status were collected and three spirituality measures and five psychosocial questionnaires were administered. Spirituality measures were obtained using the Spiritual Health Inventory (SHI), the Spiritual Perspective Scale (SpS), and the Spiritual Well-Being Scale (SWBS). Aspects of the stress process were measured using the Mishel Uncertainty in Illness Scale, the Dealing

With Illness Scale, the Impact of Events Scale, The Social Provisions Scale, and the Functional Assessment of HIV Infection Scale.

Mean age of the participants was 39 years; 61% were African-American and 55% were single. Spirituality scores were reported as moderately high, “(SpS mean = 5.08, $SD = 0.84$, range = 1.9-6; SWBS mean = 91, $SD = 16.2$, range 42-117; SHI mean = 113, $SD = 14.2$, range 79-147)” (Tuck, McCain, & Elswick, 2001, p. 780). High intercorrelations among the three spiritual measures were noted. Quality of life was positively related to social support; appraisal-focused coping; and physical, social and functional well-being. Quality of life was negatively related to uncertainty, perceived stress, emotion-focused coping, and psychological distress in the form of avoidant and intrusive thoughts. Social support was positively related to both effective coping strategies and quality of life; however, there was an inverse relationship to uncertainty. Findings were significant at $p \leq .01$. The SHI and EWB subscale of the SWBS were the spirituality measures that demonstrated significant relationships with the study variables. There was a positive relationship between spirituality (as measured by EWB) and quality of life, social support, effective coping strategies; there was an inverse relationship between spirituality and perceived stress, uncertainty, psychological distress and emotional-focused coping. The EWB subscale of the SWBS accounted for most of the significant findings. The findings support the inclusion of spirituality as a variable for consideration when examining the psychosocial factors and quality of life of persons living with HIV-Disease.

This pilot study was critically important because it demonstrates the centrality of spirituality within the PNI model. Tuck, McCain, and Elswick (2001) propose that, in healthy individuals, the integration of body, mind, and spirit contributes to a balanced, healthy life. And, for PWHA, spirituality integrated with social and psychological well-being may lengthen life or enhance one's quality of life.

The authors acknowledge that the numerous bivariate correlations in their study present a threat of Type I error. Therefore, only those correlations $\geq .40$ and significant at the $p \leq 0.01$ level were considered to be clinically meaningful. Tuck, McCain, and Elswick (2001) recommend that future studies be conducted with a larger sample size and less variable correlation.

McCain et al. (2007) conducted a randomized clinical trial to test the efficacy of three 10-week stress management intervention groups (cognitive-behavioral relaxation training [RLXN], focused tai chi training [TCHI], and spiritual growth groups [SPRT]); a control group (CTRL) was also included in the study. The purpose was to determine if the three interventions would improve and sustain improvements 6 months later in the areas of psychosocial functioning, quality of life, and physical health among 252 persons with varying stages of HIV-Disease.

Data were collected at pre-intervention, post-intervention, and 6-month follow-up visits. Sixty percent of the participants were male, 75% African-American, 23% European American, and 1.6% Hispanic American; average age was 42.2 years. Sixty-eight (30%) completed the SPRT group. All three intervention groups had higher lymphocyte proliferative function when compared to the CTRL group. The SPRT group

also had higher natural killer cell cytotoxic function (42.81 LU vs. a decrease of -38.28 LU), higher levels of IFN- γ production (215.38 vs. -196.14), significantly increased levels of IL-4 production (0.28 vs. -0.26) and an increase (838.5 vs. -1698.8) in the physiological variable of lymphocyte proliferation between the pre-intervention and the 6-month follow-up visits. Findings indicate that, “the interventions were associated with enhancement in immune system functional status” and that the increased natural killer cell function for the SPRT group marked an additional functional enhancement (McCain et al., 2007, p. 20). These findings are of particular interest because they demonstrate relationships between a spirituality-based intervention and physiological measures of health status in PLWHA. Further study, to explore what are the exact mechanisms involved in that relationship, is clearly indicated.

Dunbar, Mueller, Medina, and Wolf (1998) conducted a qualitative study to explore three questions: (a) will “everyday,” unpublished women ($n = 34$) with HIV-Disease describe positive aspects of living with the disease, (b) how well would a model developed by Dunbar and Mueller reflect those descriptions, and (c) how should the researcher’s ideas be revised given the accounts provided by the participants?

Participants’ ages ranged from 26-53 years (mean =36 years); 44% reflected the rich mix of heritages (Hawaiian, Filipino, Chinese, Portuguese, Japanese, Hispanic, African-American, and White) of the community in which the study was conducted. A full 82% reported histories of having been physically or sexually assaulted. Participants were recruited on a statewide basis with referrals made by AIDS service organizations, chemical dependency treatment programs, physicians, prior participants’ word of mouth,

community health and homeless outreach workers, women's clinics, press releases, and public service announcements. Audio taped, semi-structured interviews (90-210 minutes) consisted of open-ended questions followed by prompts to elicit further information or clarifications; verbatim responses were recorded.

The general content areas discussed were: immediate impressions after diagnosis, history of HIV-related medical events, HIV as a source of stress, coping strategies, impact of prior life experiences on living with HIV, positive outcomes of living with HIV, specific questions about the model of transcendence from earlier research, experiences with HIV service providers, desire for further formal or informal support, advice or recommendations to other women living with HIV, and demographic information. A total of 28 (82%) responded that they had discovered unexpected positive outcomes as a result of their disease; the following as some of their positive experiences: rebuilt relationships; newfound values; a new sense of meaning and purpose; and discoveries of connections with nature, God, and higher powers. Some of the women described a profound healing in their lives that made room for a richer existence. Five themes (versus four in an earlier model) were identified: reckoning with death, life affirmation, creation of meaning, self-affirmation, and redefining relationships.

The investigators conclude that their findings suggest many and probably most women living with HIV can describe positive psychological and spiritual growth, which they believe would be consistent with the five themes described in their study. The concluding statement made by Dunbar et al. (1998) implies a level of generalizability, which is inappropriate for this qualitative study. Also, there is no mention in the article

regarding “theoretical saturation” or “sampling to redundancy” which, according to Meadows and Morse (2001), is an important factor in verifying qualitative inquiry. However, the findings are supportive of those by Siegel and Schrimshaw (2000), which indicate that spiritual growth occurs as a result of living with HIV-Disease. A high percentage (82%) of the participants reported a history of either physical or sexual abuse; this is also an important area of future research that should be explored in its relationship to acquiring HIV/AIDS.

The purpose of a study by Woods et al. (1999) was to examine the relationship between religiosity and psychological and physical indicators of health status in a sample of gay men infected with HIV-Disease. The authors hypothesized that greater religiosity would be associated with better affective status and immune status and those associations would be independent of a sense of self-efficacy or a greater use of active coping strategies to deal with the disease.

Participants ($n = 106$) were recruited from the greater Miami and Miami Beach area. The psychosocial instruments used were the Beck Depression Inventory (BDI), a 57-item situational version of the COPE instrument, and a 10-item questionnaire to measure self-efficacy. In order to measure utilization of religious resources participants were requested to report how many times in the past 30 days they had prayed, attended religious services, read religious material, and discussed spiritual issues with lay-people. To make determinations regarding immune status, morning peripheral venous blood samples were drawn to determine CD4⁺ cell counts.

The mean age was 35.4 years; 55% identified themselves as White, 30% Hispanic, and 6% African-American. Forty-eight percent reported being raised Catholic, 28% Protestant, and 8% Jewish. Factor analysis conducted on the religious data produced two factors that were moderately correlated ($r = 0.31$). Factor I items dealt with coping mechanisms employed in the face of HIV infection and were labeled “Religious Coping.” Factor II items included current religious behaviors and was labeled “Religious Behavior”; the two factors were used as predictor variables to test the study hypotheses.

No significant differences were demonstrated between high and low religious behaviors or high versus low religious coping with respect to the control variables (exercise; sleep; use of antiretrovirals; and cigarette, coffee, or alcohol consumption). Neither were there any significant correlations between the control variables and the dependent measures (psychological distress or immune status). Religious coping was the only religious variable significantly associated with the BDI scores ($p < 0.01$), accounting for 10% of the variance. A significant inverse relationship was revealed between religious coping (e.g., placing trust in God, seeking comfort in religion) and Beck Depression Inventory scores, but no significant relationship between religious coping and specific immune markers. After controlling for self-efficacy and active coping, religious coping still accounted for a significant increment in variance of the BDI scores. Religious behavior was the only variable significantly associated with $CD4^+$ count ($p < 0.01$), accounting for 15% of the variance in immune status. There was a significant association between religious behavior (e.g., service attendance, prayer, spiritual discussion, reading religious literature) and higher T-helper-inducer cell ($CD4^+$) counts and higher $CD4^+$

percentages, but not with depression. After controlling for self-efficacy and active coping, religious behavior still accounted for a significant increment in variance of CD4⁺ cell counts.

The hypotheses, that the association between religiosity and health and the association between religious coping and the BDI scores might be factors of disease staging, was tested and findings suggests that coping and depression might be mediated in part by the presence of greater physical symptoms. The analyses also suggest that the association between religious coping and BDI scores might be independent of disease progression and religious coping may make a marginally significant contribution toward the variance in BDI scores. The hypothesis, that individuals are less active in religious expression as they become more ill, was also tested. Findings suggest that the association between participants' religious behavior and CD4⁺ cell counts was independent of disease progression.

These study findings indicate that religious behavior in addition to religious coping may be important aspects of physical health status in PLWHA. However, the small sample size and the inclusion of only gay males are limitations of the study. Information about the religious affiliation apparently addressed religious upbringing and not current religious affiliation or beliefs. Furthermore, the instruments used in the study were designed to measure only religious coping and religious behavior and did not address the existential aspects of spirituality, which were shown in the Tuck, McCain, and Elswick (2001) study to be important to health status. Future studies could include instruments designed to measure existential elements of spirituality as well as

information about current religious affiliation or belief; such exploration could provide valuable information regarding how these aspects of religiosity might further impact psychological and physical indicators of health status in PLWHA.

Carson and Green (1992) examined the relationship of spiritual well-being and selected demographic variables to hardiness in a group of 100 participants who were HIV sero-positive or had AIDS. The SWBS, with its two subscales of RWB and EWB, was used to measure spiritual well-being. The Personal View Survey (PVS) was used to measure Hardiness along with its components, challenge, control, and commitment. Demographic data were collected using the Demographic Data Survey (DDS), which included questions related to: gender; length of time since diagnosis; source of infection; perception of emotional, physical, and spiritual health; participation in health-promoting, spiritual and AIDS-related activities; whether the participant considered himself or herself to be religious; and religious affiliation.

The basis for the Carson and Green (1992) study was work by Viktor Frankl (2000), who theorized that individuals strive for meaning and that this meaning is linked to psychological health. Hardiness was defined as, “an existential striving to order and derive meaning out of the stresses of life” (p. 213). Components of hardiness were: commitment, control, and challenge and includes an element of responsibility.

Participants were recruited from the Baltimore, MD area; males were the predominant (86%) members of the group and the mean age was 37.2 years. Perceived spiritual health was rated as good and over half of the sample rated their participation in prayer, meditation, and the use of visualization or imaging as “somewhat” to “very

much” participation; prayer received the highest mean score. In contrast to these findings, over half of the participants indicated “none” to “very little” participation in spiritual retreats, reading religious literature, and attendance at church services. Fifty-two responded that they belonged to an organized religion, but only 48 of these identified a specific faith; of these, 16 belonged to the Roman Catholic Church, 24 belonged to Protestant denominations, 3 were Jewish, and 5 identified other faith traditions.

SWBS was significantly related to hardiness ($r = .417; p < .001$), as was EWB ($r = .51; p < .001$). Both the EWB and RWB subscales were statistically correlated with hardiness; however, the correlation of EWB and hardiness was significantly greater than that for RWB and hardiness ($t = 2.46; p < .05$). Carson and Green (1992) conclude that their study findings reveal participants who were spiritually well and able to find meaning and purpose in their lives were harder than the other participants. Their findings support the study hypotheses, which were based on Frankl’s theory that individuals strive for meaning and that this meaning is linked to psychological health.

Studies such as the one conducted by Carson and Green (1992) are vulnerable to reverse correlation (e.g., those who are harder may be more able to find meaning and purpose in their lives). The findings also may be misleading in that there are other undetected variables that may have impact on the outcome (e.g., gender, race, ethnicity/culture). The investigators suggest that future studies be more inclusive of women and intravenous drug users. They also suggest that future studies could include a qualitative component in conjunction with the quantitative data used in their study.

Samples that include a wider diversity in terms of religious background and address demographics related to race and ethnicity would also be more representative and may enable investigators to detect additional relationships.

Bower, Kemeny, Taylor, and Fahey (1998) suggest that finding meaning (which has been identified as a component of spirituality) in response to an HIV-related stressor is associated with changes in immune status and health. The hypotheses of their study were: (a) men who engage in cognitive processing following the death of their friend or lover will be more likely to derive meaning from the bereavement experience and (b) the discovery of meaning will be associated with positive change in CD4⁺ T-cell levels over a 2-3 year follow-up period and with lower rates of AIDS-related mortality over an extended follow-up. Bower et al. defined *cognitive processing* as a deliberate, effortful, or long-lasting thinking about the death of one's friend or lover; *discovery of meaning* was defined as a major shift in values, priorities, or perspectives in response to that loss. In all of the analyses, cognitive processing and the discovery of meaning were treated as dichotomous variables.

The 40 participants were selected from a larger longitudinal study of the epidemiology and natural history of HIV infection and AIDS in gay and bisexual men. A requirement of the study was that participants had participated in a semi-structured bereavement interview after the loss of a close friend or partner to AIDS, had been HIV-seropositive for a minimum of 2 years prior to the interview, had no AIDS diagnosis at the time of the interview, and had CD4⁺ T-lymphocyte values available for a minimum of

2 years following the bereavement. The majority of the informants was Caucasian (98%) and had at least a college degree (65%); the mean age was 39.5 years.

Every 6 months participants in the study were examined for signs and symptoms of AIDS, interviewed for information pertaining to contributing factors to seroconversion or HIV progression, and blood samples were drawn. Participants were sent standardized psychological questionnaires and AIDS-specific questionnaires that had been developed by the researchers prior to the visits.

Results indicate that cognitive processing was associated with changes in CD4⁺ slope but only to the extent that it led to a discovery of meaning from the bereavement. The discovery of meaning was also associated with a lower rate of AIDS-related mortality and the lower rate of AIDS-related mortality continued over a 4-9 year follow-up period. Fifteen of the 40 participants died of AIDS-related causes; only 3 of those men had reported finding meaning from the death of their friend or partner, whereas 13 of the 25 survivors had found meaning from their loss. Findings indicated that the lower mortality rate might be attributed to the less rapid decline in CD4⁺ T-lymphocytes evidenced in the finding meaning group. Of the several psychosocial and biobehavioral mediators assessed, none were significantly associated with the discovery of meaning. Only the use of AZT was found to be significantly associated with CD4⁺ slope and with mortality. However, after controlling for AZT, discovery of meaning remained a significant predictor of both CD4⁺ slope and AIDS-related mortality.

The study results highlight the importance of distinguishing between the process of responding to a stressful experience and the cognitive outcomes of those responses.

One way of responding may lead to a diversity of cognitive outcomes. Each of the outcomes may have a different effect on psychological adjustment, immune function, and physical health. Bower et al. (1998) cite that limiting factors in their study were the small sample size and that participants were primarily White, well-educated men. They also acknowledge that the relationships observed might have been influenced by confounding variables or by other psychosocial and biobehavioral characteristics that were not assessed. The researchers admit that their approach to assessing cognitive processing and finding meaning has not been empirically validated in other studies. In conclusion, Bower et al. suggest that positive outcomes may result from stressful events. Those positive states, specifically finding meaning, may be associated with positive immunologic outcomes and improved health status. The findings further support the crucial role of meaning making in health status for PLWHA.

Summary and Discussion

Living with HIV/AIDS is a tumultuous experience. PLWHA experience their emotions as being out of control; they seek to find meaning and purpose in their disease and pose questions such as “Why AIDS”, “Why me”, “Why now” (Bridge, 1986, abstract). Some PLWHA report that their relationships are badly damaged and their previous support systems offer no hope and no cure (Bridge, 1986); they began to question their faith (Siegel & Schrimshaw, 2000) as a result of their experiences.

Many PLWHA turn to religion and/or spirituality as a way to cope with the multiple stressors brought on by the disease (Depalo, 1997; Fryback & Reinert, 1999;

Gray & Cason, 2002; Martin et al., 1995; Siegel & Schrimshaw, 2000; Sowell et al., 2000; Tarakeshwar, et al., 2005; Tuck, McCain, & Elswick, 2001; Woods et al., 1999). Some studies show that PLWHA report a greater use of religion and spirituality when compared to similar HIV-negative individuals (Pargament, McCarthy, et al., 2004).

Hall (1998) found that spirituality was described by PLWHA in a language unique to them. Other researchers found that PLWHA expressions of spirituality included references to God or a Higher Power (Dunbar et al., 1998; Fryback, 1991; Fryback & Reinert, 1999; Guillory et al., 1997; Hall, 1998; Martin et al., 1995; Sowell et al., 1997; Tuck & Thinganjana, 2007), recognition of mortality (Dunbar et al., 1998; Fryback, 1991; Fryback & Reinert, 1999), and self-actualization (Fryback, 1991; Fryback & Reinert, 1999). Six major themes associated with spirituality for PLWHA are: relationship with a Supreme Being, prayer and meditation, peace, love, healing, and religiosity (Guillory et al., 1997). Religious coping is described as placing one's trust in God and seeking comfort in religion (Woods et al., 1999). One way spirituality emerges in the experience of HIV-Disease is that beliefs must decline and strengthen in order to preserve integrity (Hall, 1998). In one study, participants felt that long-term survival depended on attending to spiritual needs as well as on safeguarding physical health (Pawluch, Cain, & Gillett, 2000).

Research indicates spirituality is positively related to quality of life (Fryback & Reinert, 1999; Sowell et al., 2000; Tuck, McCain, & Elswick, 2001), social support, and effective coping strategies (Tuck, McCain, & Elswick, 2001). Additionally, mastery over stress has been significantly correlated with one's spiritual perspective (Gray & Cason,

2002). Conversely, spirituality is inversely related to depressive symptoms (Coleman, 2004; Nelson et al., 2002; Woods et al., 1999), perceived stress, uncertainty, psychological distress, emotional-focused coping (Tuck, McCain, & Elswick, 2001), and emotional distress (Tuck, McCain, & Elswick, 2001; Sowell et al., 2000).

Effective coping with stressors has been postulated to have profound effects on morbidity and mortality (Kiecolt-Glaser, McGuire, Robles & Glaser, 2002). The findings in the reviewed studies support this postulation; spiritual and religious practices were linked to higher CD4⁺ counts and higher T-helper-inducer cell counts (Woods et al., 1999). Some of the spiritual or religious practices in which PLWHA report engaging are: attending church services, prayer, listening to tapes, singing in the choir, Bible study, and participating in prayer groups (Martin et al., 1995); prayer is the most frequently used practice reported (Carson & Green, 1992; Guillory et al., 1997; Martin et al., 1995; Pawluch et al., 2000; Sowell et al., 1997). Spirituality and religiosity have also been identified as significant factors in abstinence from illicit drug use during methadone maintenance treatment (Avants et al., 2001), which is an important factor in the prevention of HIV/AIDS.

Study findings also indicate that hardiness is significantly related to spiritual well-being (Carson & Green, 1992). Finding meaning, which is a component of spirituality (Chiu, 2000; Coyle, 2002; Ferrell et al., 1998; Flannelly et al., 2002; Fryback, & Reinert, 1999; Halstead & Hull, 2001; Hungelmann et al., 1996) has been associated with positive immunological outcomes and improved health status (Bower et al., 1998). The discovery of meaning has been associated with lower AIDS-related mortality, even over a 4-9 year

follow-up period; these lower mortality rates may be attributed to a less rapid decline in CD4⁺ T-lymphocytes as found in groups of participants who found meaning (Bower et al., 1998). In one study, participants felt that spirituality had been a bridge between hopelessness and meaningfulness in life (Fryback & Reinert, 1999). Bower et al. (1998) suggests that the beneficial aspect of spirituality may be largely related to the search for meaning and strength, placing illness in a broader context, and acceptance.

Many of the participants in the reviewed studies relate perceived positive life changes as a result of being diagnosed with HIV/AIDS (Bridge, 1986; Dunbar et al., 1998; Fryback & Reinert, 1999; Pawluch et al., 2000; Siegel & Schrimshaw, 2000). Some of those changes are: growth in religiousness and/or spirituality (Siegel & Schrimshaw, 2000); deepening of faith (Siegel & Schrimshaw, 2000); receiving a blessing (Pawluch et al., 2000); newfound values; rebuilt relationships; new sense of meaning and purpose; discovery of connections with nature, God or Higher Power; profound healing that leads to richer existence; life affirmation; self-affirmation; positive psychological growth (Dunbar, et al., 1998); chance to correct previous mistakes; opportunity to redirect life; as a catalyst that brought about needed changes on a societal level (Bridge, 1986); and better quality of life (Fryback & Reinert, 1999). Study participants described their experiences in terms of “healing” versus “curing” (Pawluch et al., 2000). Participants have reported that purpose in life emerges from stigmatization, opportunities for meaning arise from having a terminal disease, and after suffering, spirituality frames one’s life.

Health for the PLWHA in these studies is described as a sense of peace or satisfaction as well as personal fulfillment and atonement (Pawluch et al., 2000); their HIV-Disease is considered to be a part of health (Fryback, 1991). The spiritual domain is described as one of the domains of health, along with the physical and mental or emotional domains (Fryback, 1991; Fryback & Reinert, 1999; Fryback, Reinert, & Bonita, 1997; Guillory et al., 1997; Pawluch et al., 2000; Sowell, et al., 1997). It is suggested that spirituality is an essential component to feelings of health and well-being (Fryback & Reinert, 1999; Sowell et al., 1997) as well as a theme of healing (Guillory et al., 1997). Many PLWHA turn to alternative therapies, which include spiritual practices as sources of healing (Bridge, 1986; Martin et al., 1995; Pawluch et al., 2000; Sowell et al., 1997). Many of those who seek spiritual healing focus their efforts toward organized religious groups such as their church (Guillory et al., 1997; Sowel, et al., 1997).

A variety of studies were conducted among various groups of PLWHA. Among those study groups have been: people with advanced disease states (Hall, 1998; Sicher et al., 1998), terminally ill/potentially terminally ill individuals (Chibnall, Videen, Duckro, & Miller, 2002; Fryback, 1991; Fryback et al., 1997; Fryback & Reinert, 1999; Nelson et al., 2002), homosexual males (Bower et al., 1998; Bridge, 1986; Depalo, 1997; Woods et al., 1999), African-Americans (Coleman, 2003a; Coleman, 2004; Coleman & Holzemer, 1999), injection drug users (Avants et al., 2001), women (Dunbar et al., 1998; Gray & Cason, 2002; Guillory et al., 1997; Sowell et al., 2000), minority women (Byrnes et al., 1998; Knight, 1998; Siegel & Schrimshaw, 2000), and Haitians (Martin et al., 1995). Virtually every study on religion and spirituality conducted with PLWHA attests to the

significance of this construct for these individuals (Pargament, McCarthy, et al., 2004, p. 1202). Nevertheless, there remain significant gaps in knowledge that demand investigation.

There were no studies identified in the search of literature regarding PLWHA that focus on adults aged 50 years and older even though AIDS progression is rapid in this age group (Coleman, 2003b). Neither were there any studies that focus specifically on the relationship between spirituality and healing in long-term survivors of HIV/AIDS.

Additional areas of study that had gone unexplored were comparison studies between newly diagnosed PLWHA and long-term survivors. Questions that ensue are: (a) Does spirituality have an impact on morbidity and/or mortality in people diagnosed with HIV/AIDS, (b) Does spiritual growth or maturity occur as a result of living with HIV/AIDS, (c) Do long-term survivors experience a greater degree of spiritual well-being and meaning in life than newly diagnosed PLWHA, (d) Do newly diagnosed PLWHA rely more on religious coping methods than do long-term survivors of HIV/AIDS, (e) Is the use of positive methods of religious coping (e.g., seeking spiritual support, benevolent religious reappraisals) associated with long-term survival of HIV-disease.

Pargament (1999) believes that methods of religious or spiritual coping do not duplicate methods of nonreligious coping; studies demonstrate that measures of specific methods of religious/spiritual coping significantly predict outcomes to life stressors. Such research findings suggest a model in which religious/spiritual coping methods mediate the relationship between global variables, such as intrinsic religiousness, frequency of prayer, denomination, and frequency of church attendance, and the outcomes of stressful

life events. Pargament goes on to state that these specific methods of coping have a more immediate and most proximal implication for health. More research is needed to explore what impact these methods of coping and religious practices have on health status in PLWHA.

Pargament (1999) also states that several studies have found significant relationships between the sense of meaning in life and health indicators. Barroso and Powell-Cope (2000) conducted a metasynthesis of qualitative research regarding the experience of PLWHA. The most prominent metaphor was finding meaning in HIV/AIDS, which “represented transcendence...and helped them to deal with HIV/AIDS on an existential level” (p. 351). Those persons who were not able to find meaning or experienced “shattered meaning” were unable to “establish a framework for coping with HIV” (p. 351). Their findings dramatically highlight the need for research that includes the existential measures of spirituality, especially meaning, and their relationship with health status in PLWHA.

This review of research shows, “striking evidence of the importance of religion and spirituality in the lives of patients” (Kilpatrick et al., 2005, p. 64) and especially in the lives of PLWHA. More in-depth understanding of the role of spirituality and religion to the long-term survival of PLWHA is critically needed.

Method

Introduction

A quantitative, exploratory study was conducted to examine the relationship between spirituality and health status in people living with HIV-Disease (PLWHA). This chapter presents an overview of the research design and methodology of data analyses for this study.

Research Design

A model building approach was used in this study to explore the relationships among the variables, (physiological, sociocultural, spiritual, developmental, and psychological) of the Neuman Systems model (Neuman & Fawcett, 2002). Of specific interest to this study was the relationship of spirituality to the physiological variable as represented by health status and the research question was, “How well does spirituality predict health status in PLWHA?” The specific aims of the study were to:

1. Determine the relationships among specific variables (physiological, psychological, sociocultural, developmental, and spiritual) of the Neuman Systems Model.

2. Determine the extent to which the group of independent variables (psychological, sociocultural, developmental, and spiritual), taken together, predict the physiological dependent variable of health status.
3. Determine the relationship between spirituality and the physiological status of PLWHA, after controlling for the psychological, sociocultural, and developmental variables.
4. Determine the relative importance of spirituality in explaining health status in comparison with the psychological, sociocultural, and developmental variables.
5. Determine if religious coping has a moderating effect on health status and spiritual well-being.

The physiological variable of “health status” was the dependent variable for the study and the psychological, spiritual, sociocultural, and development variables were the independent variables. An additional independent variable was the covariate, time since diagnosis of HIV-Disease.

Conceptual-Theoretical Framework

The conceptual-theoretical-empirical model that was the guiding framework for this study was the Neuman Systems Model (Neuman & Fawcett, 2002). The Neuman Systems Model (NSM) is a comprehensive systems-based conceptual framework (refer to Chapter on Literature Review). The philosophic base of the model “encompasses wholism, a wellness orientation, client perception and motivation, and a dynamic systems perspective of energy and variable interaction with the environment to mitigate possible

harm from internal and external stressor” (p. 12). This philosophy pervades all aspects of the model. Neuman (2002) theorizes that a client system is a composite of five interacting variable areas; these variable areas are in varying degrees of development and have a wide range of interactive styles and potential. The concept of “wholism,” refers to the belief that no part of a system is to be considered in isolation but is to be viewed as part of the whole. The five variables according to the model are: (a) physiological, (b) psychological, (c) sociocultural, (d) developmental, and (e) spiritual. Neuman describes them as follows:

1. *Physiological* - refers to bodily structure and internal function.
2. *Psychological* – refers to mental processes and interactive environmental effects, both internally and externally.
3. *Sociocultural* – refers to combined effects of social cultural conditions, and influences.
4. *Developmental* – refers to age-related development process and activities.
5. *Spiritual* – refers to spiritual beliefs and influences. (pp. 16-17)

Neuman (2002) assumes that each person is born with a spiritual energy force and that the body has the potential to be nourished through the positive use of this spiritual energy. Neuman postulates that the spiritual variable is an innate component of one’s basic structure, whether or not it is ever acknowledged or developed by the client. The theory states that one’s spirituality controls the mind and the mind consciously or unconsciously controls the body. The spiritual variable positively or negatively effects or is affected by the conditions and interactive effects of other variables, such as grief or

loss. Such variables may arrest, decrease, initiate, or increase spirituality. Neuman contends that purposeful interventions, which support spirituality, may catalyze an energy source that is useful in achieving change and optimal system stability. Although Neuman's model is the guiding framework for this study, its focus is not the topic of intervention. It is proposed that the knowledge derived from this study will be critical to the later development of effective interventions.

Participants

Recruitment

Recruitment of participants took place through a referral process from the Infectious Disease Clinic of the Virginia Commonwealth University Medical Center (VCUMC) located in Richmond, Virginia. Richmond is the capital city of Virginia and is situated in the central region of the state. This particular facility was chosen based on information provided by the Virginia Department of Health (2000), which indicates that the largest percentage of PLWHA in Virginia reside in the central and eastern regions of the state.

Participants were referred to the study by healthcare employees of the Infectious Disease Clinic of the VCUMC and by other study participants. Prior to data collection, referral personnel or staff were provided with an Institutional Review Board-approved (IRB) information sheet that outlined the purpose of the study, the characteristics that qualified individuals for potential participation in the study, and investigator contact information. The researcher gave an oral description of the study to referral personnel in

addition to providing them with the written description. Referral personnel were requested to distribute these information sheets to potential study participants and were instructed to provide the researcher's contact information to those persons interested in participating in the study; respondents were informed that they could contact the investigator if he or she was interested in participating in the study. No personal identifiable information regarding a potential study participant was to be given to the investigator without specific written consent by the potential participant. The information sheets were also placed on tables in the waiting room and examination rooms of the aforementioned facility.

The investigator was present at the aforementioned facility at pre-scheduled times to answer any questions that respondents had prior to enrollment into the study and to conduct subsequent enrollments. The investigator maintained sole responsibility for recruitment and enrollment of study participants, obtaining informed consent, and for administering the research instruments. As participants were recruited they were encouraged to inform other known potential participants about the study and to give those persons who were interested in the study the investigator's contact information.

Sample Description

A convenience sample of adult (18 years old or older), English-speaking individuals who were positive for HIV-Disease were recruited for participation in this study. A power analysis using nQuery 6.0 software revealed that a sample size of between 39 and 62 would yield a power of 0.80 with an alpha level of 0.05 for an R^2 of

between 0.20-0.30. This R^2 was chosen based on similar previous research studies (Carson & Green, 1992; Coleman, 2004; Gibson & Parker, 2003; Mickley et al., 1992; Pargament, 2005).

The duration of recruitment was fourteen weeks. The predominant reasons given by potential enrollees for declining participation in the study were: (a) the amount of time involved in completing the questionnaires, (b) no incentives were offered for participation, and (c) concerns regarding how the study information would be used and who would have access to the information. The consent form included a statement that said, “information from the study and the consent form signed by you may be looked at or copied for research or legal purposes by Virginia Commonwealth University” and this was a concern for several potential enrollees. At the end of the fourteen-week period, a study sample of 39 participants had been enrolled in the study and enrollment was concluded.

Protection of Human Subjects

IRB approval of this study was obtained prior to initiating any of the recruitment efforts. The investigator did not directly approach persons for the purpose of recruiting them into the study. IRB approved flyers regarding the study were available in highly visible areas of the Infectious Disease Clinic of the VCUMC and clinic personnel were relied upon to refer individuals to the investigator if he or she expressed interest in participating in the study. The purpose of the study and the IRB-approved information

and consent form were reviewed with respondents in a private setting at the clinic prior to participation in the study.

During the initial meeting with the respondent, he or she was provided with information (both a copy of the consent form and an oral description) about the study purpose, description, potential risks and discomforts, the right to decline participation, and potential benefits; no incentive was provided for participation in the study. The respondents were encouraged to discuss any questions or concerns about the research study. The respondent was also informed about measures that had been taken to insure his or her privacy. If the respondent expressed a desire to participate in the study, he or she was provided with an IRB-approved informed consent form. The individual was then given sufficient time to read the informed consent document or the investigator read the form to him or her if that was the respondent's preference. The investigator used the *VCU Informed Consent Evaluation Instrument* to assure that the enrollee understood the informed consent in a satisfactory manner. If the respondent expressed a desire to participate in the study after reading the informed consent and the investigator deemed that he or she satisfactorily understood the informed consent discussion, the respondent then was instructed to sign the informed consent. The respondent was given a copy of the consent and the investigator maintained a signed copy for her secured files.

This study involved only minimal risk to participants. The study design called for participants to answer questions found on seven research questionnaires and explored individual and group characteristics or behaviors related to the research variables (physiological, spiritual, psychological, sociocultural, time since diagnosis, and

developmental). There was the potential for emotional discomfort on the part of participants related to answering sensitive questions regarding acquiring and living with HIV-Disease. The investigator holds a Master of Divinity Degree and had received additional training and instruction in pastoral care and counseling and was available for counseling services throughout the enrollment procedure should the participant experience associated emotional discomfort. In addition, participants were reminded that his or her participation in the study was strictly voluntary and that he or she could decide not to participate or to withdraw from the study at any time without affecting the usual care, attention, or commitment of the health care or social services provided at the Infectious Disease Clinic of VCUMC.

There was also a remote possibility of the unwanted disclosure of HIV-Disease status of participants. To insure confidentiality, the enrollment and administration of all study instruments took place in a private area designated for the sole purpose of conducting that portion of the study. Participants received a copy of the signed consent form and the researcher's copy was sealed in an envelope and kept in a locked file, separately from the other research instruments, and accessible only to the researcher. Research instruments were coded with a three-digit numerical code and names of the participants did not appear on the instruments. Once the instruments were completed they were placed immediately into an envelope and were maintained in a locked file when not being used by the researcher. The locked file was accessible only to the investigator. Subsequent reports and/or publications of the research findings will be presented as a

group data without identifiers and in a manner that makes it impossible to ascertain identity of the participants.

Procedure

Once the informed consent was obtained, the participant was asked to sign a waiver allowing the researcher to obtain the following information from his or her medical records: date of diagnosis with HIV-Disease; last known CD4⁺ cell count; date of last CD4⁺ cell count; lowest CD4⁺ count; viral load; AIDS diagnosis status; and if AIDS-positive, date of diagnosis. The waiver was attached to the signed consent form, which was placed in a sealed envelope and kept separately from the completed research instruments. The participant was then given the following instruments to complete: the Spiritual Well-Being Scale (Paloutzian & Ellison, 1982) (Appendix A); the Brief Religious Coping questionnaire (Brief RCOPE) (Pargament, Smith, Koenig, & Perez, 1998) (Appendix B), the Religious Commitment Inventory-10 (RCI-10) (Worthington et al., 2003) (Appendix C), the Sense of Coherence: Short Form (SOC-13) (Antonovsky, 1987) (Appendix D), the 1993 Revised CDC Classification System for HIV Infection (CDC, 1992) (Appendix E), the Revised HIV Center Medical Staging Scale (rHCMSS) (McCain et al., 1998) (Appendix F), and a Demographic Information sheet (Appendix G). The time needed to complete the tools was approximately 20-45 minutes. Participants completed all data instruments; two of the instruments, the rHCMSS and the 1993 Revised CDC Classification System for HIV Infection, were completed with the assistance of the investigator. The investigator also provided assistance to any participant

in completing the other instruments if he or she requested it. Following the completion of the research instruments, the forms were numerically coded and placed in a sealed envelope. The envelopes containing all research materials were then placed in a locked file that was accessible only to the investigator.

Method

Variables

The NSM (Neuman & Fawcett, 2002) was used as a guide for variable selection for this study; the five study variables from that model are the physiological, psychological, sociocultural, developmental, and spiritual. The physiological variable was chosen as the dependent variable for the study and the remaining four were the independent variables. Current research (Carson & Green, 1992; Carson et al, 1990; Chiu, 2000; Cohen, Boston, Mount, & Porterfield, 2001; Coleman & Holzemer, 1999; Coward, 1991; Coyle, 2002; Fehring, Miller, & Shaw, 1997; Ferrell et al., 1998; Flannelly et al., 2002; Fryback, & Reinert, 1999; Halstead & Hull, 2001; Hungelmann et al., 1996; Mickley et al., 1992; Nelson et al., 2002; Post-White et al., 1996; Ross, 1995; Sowell, et al., 2000; Tuck, McCain, & Elswick, 2001; Woods et al., 1999) has demonstrated the importance of spirituality in the health of individuals and therefore the primary focus of interest for this research study was the relationship between the spiritual and the physiological variables.

Instrumentation

Seven instruments were used to collect data for this study. Demographic data were collected using an investigator-developed form. Data that represented the physiological variable were obtained from the following: the 1993 Revised CDC Classification System for HIV Infection (CDC, 1992), the rHCMSS (McCain, et al., 1998), and information from the researcher developed demographic questionnaire (lowest ever CD4⁺T-lymphocyte count, current CD4⁺ T-lymphocyte count, AIDS status, and viral load). The SWBS (Paloutzian & Ellison, 1982), the Brief RCOPE (Pargament, et al., 1998), the RCI-10 (Worthington et al., 2003), and religious affiliation question from the demographic questionnaire were used to collect data for the spiritual variable. Information for the psychological variable were obtained using the SOC-13 Scale (Antonovsky, 1987) and selected information (history of a mental health problem) from the demographic questionnaire. Sociocultural data were collected from the following questions of the demographic questionnaire: ethnicity, income, and relationship status. The demographic question regarding date of birth was used for the developmental variable. These representative data are in keeping with Neuman's (2002) description of the five interacting variables.

The Brief RCOPE (Pargament, 2005; Pargament, et al., 1998) is a 14-item Likert scale designed to incorporate religious measures into models and studies of stress, coping and health. It is a shorter version of Pargament's Religious Coping Scale (RCOPE). The instrument consists of two subscales designed to measure two patterns of religious coping methods. The positive religious coping subscale consists of seven positive coping items

(spiritual connection, seeking spiritual support, religious forgiveness, collaborative religious coping, benevolent religious reappraisal, religious purification, and religious focus); the negative religious coping subscale consist of seven negative coping items (spiritual discontent, punishing God reappraisal, interpersonal religious discontent, demonic reappraisal, and reappraisal of God's power). Although Pargament et al. describe the Brief RCOPE as an instrument that addresses religious dimensions, it is obvious from the items included that spirituality is also addressed. This instrument was viewed by the investigator as particularly suited to this study because it included both a secular and religious component of spirituality.

Pargament (2005) reports Cronbach's alpha coefficient estimates for the Brief RCOPE scale, in two population groups (college students and hospital patients above 55 years of age), were .90 and .87 for the positive subscales and .81 and .69 for the negative subscales. The Brief RCOPE has been used in studies involving palliative care patients that had life-threatening diagnoses (Hills, Paice, Cameron, & Shott, 2005) and in studies involving participants with HIV/AIDS (Cotton et al., 2006).

The Religious Commitment Inventory-10 (Worthington et al., 2003) is an instrument based on a model developed by Worthington that addressed questions regarding the affects of religion on how people evaluate their world. Worthington defines religious commitment as the, "degree to which a person adheres to his or her religious values, beliefs, and practices and uses them in daily living" (p. 85). Worthington et al. propose that a highly religious person will use his or her religious schemas to evaluate the world thereby integrating his or her religion into much of his or her life. The RCI-10

consists of 10 items rated on a 5-point Likert scale and is designed to assess one's dedication to a specific religion. The scale consists of six items that measures one's intrapersonal religious commitment and four items that measure interpersonal religious commitment.

Worthington et al. (2003) cite six studies that have been conducted using the RCI-10. The participants in those studies included secular university students; university students from Christian colleges; adults from the community; single and married people; Christians, Buddhists, Muslims, Hindus, and people who responded "none" when questioned about their religious preference; and therapists and clients at both secular and Christian counseling agencies. The reported coefficient alpha for the full scale ranged from .88 to .98. The test-retest reliability rates for the entire scale were reported to range from .84 to .87. Worthington et al. conclude that the instrument is a valuable tool for research. The RCI-10 was used to measure the religious commitment of participants in this study.

The SWBS (Paloutzian & Ellison, 1982) was developed based on the concept that spiritual well-being has two dimensions: a vertical dimension, which refers to one's sense of well-being in relationship to God, and a horizontal dimension that indicates one's perception of life's purpose and satisfaction separate from any specifically religious reference. The SWBS is a 20-item self-administered instrument designed to measure spiritual well-being in both of these dimensions (10 religious items and 10 existential items), which was viewed as a primary strength of this instrument. Three scores are derived from the SWBS: a total spiritual well-being (SWBS) score, a summed religious

well-being (RWB) score, and a summed existential well-being (EWB) score. According to Paloutzian and Ellison, the test-retest reliability coefficients for the scale are .93 for SWBS, .96 for RWB, and .86 for EWB. Alpha coefficients reflecting internal consistency are SWBS, .89; RWB, .87; and EWB, .78. The instrument was chosen because of its ability to measure the variable of interest, previous use in similar study samples, and a history of high reliability and internal consistency.

Antonovsky (1987) believed that the way a person views his or her life might have tremendous impact on the individual's health. He developed the salutogenic model to explain why some people remain healthy during times of extreme stress. Salutogenesis is a term that reflects an emphasis on health as opposed to pathogenesis. Health is considered to be on a health ease/dis-ease continuum and the salutogenic model of health was formulated in the framework of system theory thinking (Ericksson & Lindström, 2006). The central concept of the health-oriented model is a "sense of coherence" (SOC). According to Ericksson and Lindström, SOC is a resource that empowers a person to manage tension, to reflect about his or her external and internal resources, to identify and mobilize those resources, to enable effective coping by identifying solutions, and to resolve tension in a manner that is health promoting. SOC is a global orientation in which one views the world and his or her individual environment as comprehensible, manageable, and meaningful (Fok, Chair, & Lopez, 2005). Antonovsky's formal definition is as follows:

The sense of coherence is a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that (1) the

stimuli deriving from one's internal and external environments in the course of living are structured, predictable, and explicable; (2) the resources are available to one to meet the demands posed by these stimuli; and (3) these demands are challenges, worthy of investment and engagement. (p. 19)

According to Antonovsky's model, a strong SOC is required to cope successfully with life stressors and to maintain health; individuals with strong SOC "should be more capable of selecting the best available coping resources" (Fok et al., 2005, p. 174).

Antonovsky emphasized that a salutogenic orientations was critical to the development of a person's mental health. Ericksson & Lindström (2006) found that several longitudinal studies supported Antonovsky's theory. For purposes of this study Antonovsky's short form of The Sense of Coherence Questionnaire (SOC-13), was used to measure the psychological variable.

Antonovsky (1998) states that studies have been conducted in 20 countries using the instrument and the long version of the SOC instrument has been used in studies involving participants with HIV-Disease (Cederfjäll, Langius-Eklöf, Lidman, & Wredling, 2001, 2002). The SOC-13 has been used with people with chronic (Gilbar, 2003) and life-threatening illnesses (Fok et al., 2005). The SOC-13 takes approximately 10-15 minutes to complete. The SOC-13 is a 13-item questionnaire; items are answered on a 7-point Likert scale. The range of possible scores is 13-91, with a higher score being indicative of a stronger SOC. The average Chronbach's alpha for the SOC-13 is reported by Antonovsky to range from .74 -.91. Eriksson and Lindström (2006) found, in a review of research publications covering the period of 1992-2003, that the population

distribution of the SOC-13 showed a range of means from 35.39-77.60 points (*SD* 0.10-13.80).

The 1993 Revised CDC Classification System for HIV Infection (CDC, 1992) was used as one of the physiological instruments in this study. The classification system was revised in 1992 and its use by all states for AIDS case reporting is mandatory. The revised system emphasizes that the CD4⁺ T-lymphocyte count is of clinical importance in the categorization of clinical conditions associated with HIV-infection. Three ranges of CD4⁺ T-lymphocyte counts and three clinical categories make-up the system; it is represented by a matrix of nine mutually exclusive categories. The system uses the lowest accurate CD4⁺ T-lymphocyte count for classification purposes and not necessarily the most recent count. The CD4⁺ T-lymphocyte count consistently correlates with HIV-related immune dysfunction and disease progression.

McCain et al. (1998) contend that symptomatology associated with HIV-infection represents both an indirect measure of immune functioning and a significant clinical indicator of disease progression. The rHCMSS (McCain et al., 1998), CDC classification system, and T-lymphocyte and viral load data, when used concurrently, provide a comprehensive indication of HIV-Disease progression for clinical and research purposes. For that reason the rHCMSS was used as a physiological measure for this study in addition to the CDC classification system. In using the rHCMSS the investigator assigns the participant to one of the major stages of HIV-Disease based on the participant's health history. The investigator, using both clinical judgment and the delineated scaling anchors, assigns a specific score ranging from 0 to 39. The scale addresses only physical

illness and includes neurological manifestations as clinical indicators of HIV-Disease progression. The scale may be scored based on history of either symptomatology or according to current symptomatology.

According to McCain et al. (1998), it may be useful to have both the current rHCMSS score and the cumulative score in some research studies. These authors state that rHCMSS is a way to quantify the measurement of the progression of HIV-Disease symptomatology and immunological decline for statistical analyses. Based on this recommendation, the cumulative rHCMSS score was used in this study for purposes of describing the research participants and the current score was used as one of the physiological measures determining health status. In a recent study the scale was found to have an interrater reliability of .95 among three midlevel providers.

Data Preparation for Analysis

All data from the demographic questionnaire and the six research instruments were entered into the SPSS 15.0 © Statistical Software program. Data were checked three times for accuracy and nominal-level data were coded for analysis. Analysis of the data was conducted to determine missing values within the research instruments. Missing data within an instrument or subscale were replaced using the case mean value based on the items that were completed. Annual household income data were dichotomized into those whose annual household income was equal to or less than \$10,000 and those whose income was greater than \$10,000.

Findings

Introduction

In this chapter, the study findings are presented and discussed. Descriptive and demographic data are presented initially and are followed by a discussion of the findings as related to the study aims

Instrument Reliability

The reliability of instrument measures is a key factor in assessing the validity of research studies. Reliability coefficients, according to Polit (1996), should be at least .70. Cronbach's Alphas were calculated for each of the instruments used in this study for the purpose of determining their reliability. Each of the instruments demonstrated a Cronbach's Alpha level value greater than .70 (refer to Table 2).

As shown in Table 2, the Cronbach's Alpha for the Positive RCOPE subscale was .87 and .82 for the Negative RCOPE subscale. Pargament (2005) reported .90 and .87 for the positive subscale and .81 and .89 for the negative subscale in two separate studies that he conducted. Worthington et al. (2003) reported the alpha coefficient for the full RCI-10 scale was .93; for the Intrapersonal subscale, .92; and .87 for the Interpersonal subscale. The alpha coefficients for the RCI-10 in this study were slightly lower than those

Table 2: *Scale Reliability*

	Cronbach's alpha	Mean	SD	N
SWBS	.87	94.35	16.60	20
EWB	.88	43.52	10.91	10
RWB	.76	50.82	8.36	10
PosRCOPE	.87	14.77	5.71	7
NegRCOPE	.82	6.15	5.31	7
RCI-10	.90	30.82	9.93	10
IntraRCI-10	.81	19.63	5.68	6
InterRCI-10	.85	11.18	4.87	4
SOC-13	.88	52.72	16.90	13
MANG	.71	16.05	5.69	4
MEAN	.83	18.33	6.83	4
COMP	.72	18.33	6.81	5

Note. SWBS = Spiritual Well-Being Scale; EWB = Existential Well-Being; RWB = Religious Well-Being; PosRCOPE = Positive Religious Coping; NegRCOPE = Negative Religious Coping; RCI-10 = Religious Commitment Inventory-10; IntraRCI-10 = Intrapersonal Religious Commitment; InterRCI-10 = Interpersonal Religious Commitment; SOC-13 = Sense of Coherence Questionnaire: Short Form; MANG = Manageability; MEAN = Meaningfulness; COMP = Comprehensibility.

reported by Worthington et al. It was .90 for the full RCI-10, .81 for the Intrapersonal subscale, and .85 for the Interpersonal subscale. Paloutzian and Ellison (1982) reported that alpha coefficients were .89 for the total SWBS, .87 for the RWB subscale, and .78 for the EWB subscale. In our study they were: .87 for SWBS, .76 for RWB, and .88 for EWB. The average Chronbach's Alpha for the SOC-13 was reported by Antonovsky (1998) to range from .74 -.91 and in our study it was .88.

Internal and external validity of the instruments was determined and the relationships between the instruments are included in Table 3. As demonstrated in Table 3, there were significant positive correlations between SWBS (and its two subscales) and SOC-13 (and its three subscales). There were also significant negative correlations between the Negative RCOPE subscale and EWB as well as the SOC-13 (and its three subscales).

Participant Characteristics

The mean age of the 39 participants in this study was 44.8 years (range 27 to 66, $SD = 7.15$). Sixty-nine percent ($n = 27$) of the participants were Black and 30.8% ($n = 12$) were White. In terms of gender, 43.6% ($n = 17$) of participants were female, 48.7% ($n = 19$) were male, and 5.1% ($n = 2$) were transgender. The greatest proportion of the participants was single ($n = 24$, 61.5%). Of the 39 persons enrolled in the study, 23 (59%) were classified in the category of C3 according to the CDC guidelines for HIV infection classification (CDC, 1992), which means they had experienced at least one AIDS-defining illness. The length of time of diagnosis with HIV-Disease for participants in this

Table 3: Significant Correlations Between Research Instruments

	EWB	NegRCOPE	SOC-13	MANG	MEAN	COMP
SWBS						
<i>R</i>		-.312	.661**	.469**	.688**	.559**
<i>p</i>		.054	.000	.003	.000	.000
EWB						
<i>R</i>		-.378*	.659**	.523**	.606**	.591**
<i>p</i>		.018	.000	.003	.000	.000
RWB						
<i>R</i>			.452**		.575**	.338*
<i>p</i>			.004		.000	.035
NegRCOPE						
<i>R</i>	-.378*		-.418**	-.585**	-.333*	
<i>p</i>	.018		.008	.000	.038	

Note. EWB = Existential Well-Being; NegRCOPE = Negative Religious Coping; SOC-13 = Sense of Coherence Questionnaire: Short Form; MANG = Manageability; MEAN = Meaningfulness; COMP = Comprehensibility; SWBS = Spiritual Well-Being Scale; RWB = Religious Well-Being.

* $p < .05$

** $p < .01$

study ranged from 1-28 years, with a mean of 11.25 years ($SD = 6.67$). At least one-third of the participants had been living with the disease for an extended period of time; 11 (28.2%) had been diagnosed with HIV-Disease between 16 and 20 years and 2 (5.1%) had been diagnosed for more than 20 years.

Twenty-two (56.4%) of the participants in this study responded “yes” when asked if they had ever been diagnosed with a mental health problem. This self-reported rate of mental health problems (a general measure that did not require a DSM-IV psychiatric diagnoses) appears high. However, Alegria, Vila, Train, Williams, and El-Bassel (2006) report that, “lifetime and past-year prevalence of psychiatric disorders and suicidality in persons living with HIV/AIDS diverges considerably (19% to 89%) as a function of the sample and contrast groups employed” (p. 9). Treisman and Angelino (2004) even contend that the, “human immunodeficiency virus (HIV) infection has become a psychiatric epidemic” (p. 1); they report that of 250 patients surveyed at the Johns Hopkins HIV/AIDS Care Program, 54% were diagnosed with an Axis I psychiatric disturbance (other than substance use disorder) during their first appointment for HIV care. Alegria et al. state, “The elevated risk for psychiatric conditions may be directly caused by HIV/AIDS, be exacerbated by the illness, or be a precursor to the HIV disease” (p. 3). Some of the reasons Alegria et al. give for HIV-related psychiatric morbidity and psychological adjustment are: a prior history of psychiatric or substance abuse disorder, unemployment and work-related disability, coping styles, high levels of stress, the occurrence of negative life events, abusive relationships, social isolation and rejection, and certain personality characteristics. In a review of previously reported research, the

authors found that there were a disproportionate number of PLWHA who had inadequate economical and social resources previous to a diagnosis with HIV-Disease.

In regards to religious denomination, the majority of the participants ($n = 30$, 76.9%) stated they were Christian; 5.2% ($n = 2$) stated they were “multiple”, and 2.6% ($n = 1$) stated “spiritual”. The key characteristics of the sample are outlined in Tables 4 and 5 and are represented in Figure 1.

When asked about spiritual activity, every participant reported praying, ranging from a frequency of once a month or less ($n = 1$, 2.6%) to at least once per day ($n = 30$, 76.9%). This high usage of prayer has been reported in prior studies. In a study involving only women, Guillory et al. (1997) listed prayer among the six major themes associated with the term spirituality; they found that it was the most frequent practice used to seek healing. Meisenhelder (2003) conducted a study involving people over the age of 65 and reported that 60% indicated daily or more frequent use of prayer. Dunn and Horgas (2000) found that prayer was the most frequently reported complementary or alternative treatment (84 %) used by elders in times of stress. Finally, Martin et al. (1995) found that prayer was the most frequently used spiritual practice by a group of Haitians with HIV-Disease.

Twelve (30.8%) participants indicated that they read spiritual or religious materials at least once a day and 17 (43.6%) attend a place of worship at least once a week. However, 12 (30.8%) indicated they do not attend any place of worship. Refer to Appendix H for additional information regarding participants’ other spiritual activities,

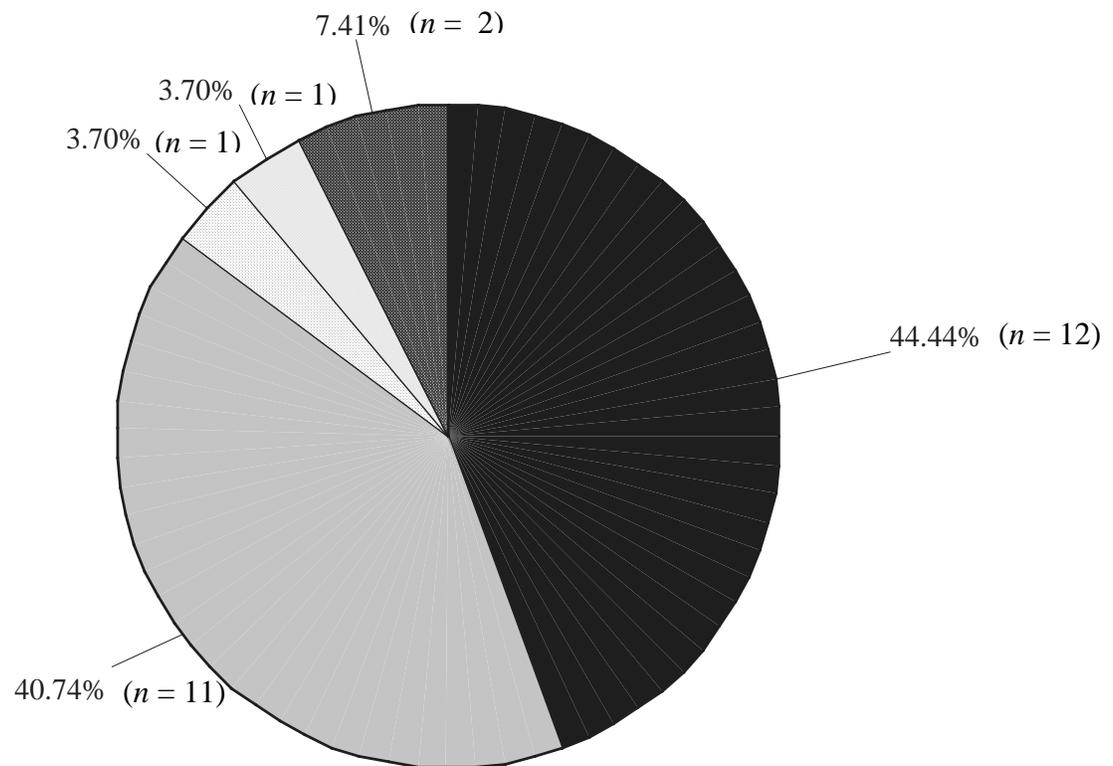
Table 4: *Demographic Data of Age and Years HIV Positive (In Years)*

	<i>N</i>	Mean	<i>SD</i>	Range
Age	39	44.82	7.15	27-66
Age at Diagnosis	38	33.89	9.06	20-58
Years HIV Positive	38	11.25	6.67	1-28

Table 5: *Demographic Data Related to Income, Education, and Mental Disorder*

	Frequency	Percent
Annual Income less than \$10,000	24	61.5
Highest level of education		
Completed 6 years or less	3	7.7
Completed between 7 & 11 years	8	20.5
Received high school diploma	13	33.3
Completed at least one year college	14	35.9
Unreported	1	2.6
Diagnosed with mental disorder	22	56.4
Received treatment for mental disorder	16	41.0
Received counseling and medication	9	23.1

Figure 1: Method of HIV Exposure ($N = 27$)



Legend

- Heterosexual Contact
- Homosexual Contact
- Intravenous Drug Use &/or Heterosexual Contact
- Intravenous Drug Use &/or Homosexual Contact
- Intravenous Drug Use

such as practicing meditation, watching spiritual or religious programs, and listening to spiritual or religious music.

Analysis of variance and *t*-tests were performed to determine if there were differences in means between groups of participants according to the demographic data of sex and ethnicity. There were no significant differences according to ethnicity but there were some significant differences according to sex (Table 6). Analyses revealed that a significantly ($p = .02$) higher proportion of female than male participants had household incomes of less than \$10,000 annually. The current rHCMSS mean score of the female participants was significantly higher than that for males ($p = .04$) and the converse was true for the mean scores of the Comprehensibility subscale of the SOC-13 in that they were significantly higher ($p = .02$) for male participants than for female.

Findings According to Study Instruments

Descriptive statistics were used to determine the mean scores of participants for each of the research instruments. As indicated in Table 7, the mean score for the SWBS for participants in this study was 94.35 ($SD = 16.60$). This mean score is higher than those reported by Carson and Green (1992) (mean = 88.23, $SD = 19.18$) and Sherman et al. (2005) (Mean = 52.1, $SD = 14$), both of whom also conducted studies with people with AIDS. However, Mickley et al. (1992) reported a SWBS mean score of 99.8 ($SD = 15.19$) for women with breast cancer and Tuck, McCain, and Elswick (2001) reported a mean score of 91 ($SD = 16.2$) in a study with 52 males with HIV-Disease. The mean

Table 6: Mean Scores (SD) by Gender

Variable	Women			Men			<i>p</i>
	<i>N</i>	Mean	<i>SD</i>	<i>N</i>	Mean	<i>SD</i>	
Age	17	43.88	5.26	19	45.26	8.96	.58
Years HIV	16	10.16	6.01	19	11.16	6.50	.64
Age at diagnosis	16	33.94	8.76	19	34.47	9.38	.86
Last CD4 ⁺ count	17	325.71	241.54	19	483.26	256.96	.07
Last CD4 ⁺ percent	17	.19	.12	19	.22	.11	.39
Lowest CD4 ⁺ count	17	158.29	136.95	19	170.95	145.63	.79
Lowest CD4 ⁺ percent	14	.12	.08	14	.16	.10	.29
Viral load	17	76,563.94	186,742.05	19	6,439.63	15,937.59	.14
Current rHCMSS	17	14.82	10.25	19	7.37	10.22	.04*
Cumulative rHCMSS	17	29.06	5.19	19	28.63	8.95	.86
SWBS	17	93.09	17.96	19	95.59	15.29	.66
EWB	17	42.24	10.43	19	45.16	10.04	.40
RWB	17	50.85	9.51	19	50.43	7.68	.89
PosRCOPE	17	16.53	4.16	19	13.16	6.47	.07
NegRCOPE	17	7.00	5.72	19	5.37	4.94	.37
RCI-10	17	29.82	9.12	18	32.94	10.28	.35
IntraRCI	17	19.35	4.72	18	20.78	5.98	.44
InterRCI	17	10.47	4.73	18	12.17	5.15	.32
SOC-13	17	46.88	19.08	19	56.95	14.30	.08
MANG	17	14.29	7.17	19	17.32	4.00	.14
MEAN	17	17.12	7.09	19	18.84	6.95	.47
COMP	17	15.47	7.05	19	20.79	6.01	.02*

Note. Years HIV = Number of years since participant was diagnosed with HIV-Disease; rHCMSS = Revised HIV Center Medical Staging Scale; SWBS = Spiritual Well-Being; EWB = Existential Well-Being; RWB = Religious Well-Being; NegRCOPE = Negative Religious Coping; PosRCOPE = Positive Religious Coping; RCI-10 = Religious Commitment Inventory-10; IntraRCI = Intrapersonal Religious Commitment Inventory; InterRCI = Interpersonal Religious Commitment Inventory; SOC-13 = Sense of Coherence Questionnaire: Short Form; MANG = Manageability; MEAN = Meaningfulness; COMP = Comprehensibility.

**p* < .05.

Table 7: Instrument Mean Scores of Research Participants

	<i>N</i>	Mean	<i>SD</i>	Minimum	Maximum
SWBS	39	94.35	16.60	60.00	118.00
EWB	39	43.52	10.91	17.50	58.00
RWB	39	50.82	8.36	33.00	60.00
PosRCOPE	39	14.77	5.71	0	21.00
NegRCOPE	39	6.15	5.31	0	21.00
RCI-10	38	30.82	9.93	13.00	50.00
IntraRCI	38	19.63	5.68	8.00	30.00
InterRCI	38	11.18	4.87	4.00	20.00
SOC-13	39	52.72	16.90	19.00	82.00
MANG	39	16.05	5.69	4.00	27.00
MEAN	39	18.33	6.83	4.00	28.00
COMP	39	18.33	6.81	5.00	32.00

Note. SWBS = Religious Well-Being; EWB = Existential Well-Being; RWB = Religious Well-Being; PosRCOPE = Positive Religious Coping; NegRCOPE = Negative Religious Coping; RCI-10 = Religious Commitment Inventory-10; IntraRCI = Intrapersonal Religious Commitment Inventory; InterRCI = Interpersonal Religious Commitment Inventory; SOC-13 = Sense of Coherence Questionnaire: Short Form; MANG = Manageability; MEAN = Meaningfulness; COMP = Comprehensibility

EWB score reported by Sherman et al. was 27.7 ($SD = 7$) and Mickley et al. reported 49.1 ($SD = 7.57$); for our research study the EWB mean was 43.52 ($SD = 10.91$). The RWB mean for our study was 50.82 ($SD = 8.36$) whereas Sherman et al. reported RWB mean of 24.3 ($SD = 8.9$) and Mickley et al. reported a mean of 50.8 ($SD = 10.19$). Raleigh, Robinson, Marold, and Jamison (2006) report that “SWB norms range from 70.47 to 109.88” (p. 31); according to these authors the SWBS mean score for participants in our study fall within the upper normal range of previously reported scores.

Hills et al. (2005) conducted a study involving hospitalized patients with life-threatening diagnoses, who met the criteria for placement in a palliative care hospice program. The researchers used the Brief RCOPE instrument in their study. Their analysis revealed a Positive RCOPE mean of 11.3 ($SD = 7.7$) and a Negative RCOPE mean of 3.2 ($SD = 4.3$). Cotton et al. (2006), in a study with participants that had HIV/AIDS, found a mean Positive RCOPE of 17.7 ($SD = 6.4$) and a mean Negative RCOPE of 10.7 ($SD = 4.3$). Pargament, Koenig, Tarakeshwar, and Hahan (2001, 2004) reported Positive RCOPE means ranging from 14.82 ($SD = 6.33$) to 15.48 ($SD = 5.95$) and Negative RCOPE means ranging from 2.28 ($SD = 3.26$) to 2.07 ($SD = 2.90$). The mean scores from our study were: Positive RCOPE, 14.77 ($SD = 5.71$) and Negative RCOPE, 6.15 ($SD = 5.31$). According to these previous studies, our participants' mean score was lower for the positive RCOPE and our Negative RCOPE mean was higher than those found in the studies by Hills et al. and Pargament et al. Our mean Negative RCOPE score, however, was lower than that found by Cotton et al. in their work with participants with HIV-Disease.

The mean score of the RCI-10 instrument for participants in this study was 30.82 ($SD = 9.93$). Worthington et al. (2003) report that for groups totaling almost 2,000 people, the means for secular groups for the full-scale RCI-10 were between 21 and 26 ($SDs = 10-12$). Worthington et al. suggest that "the normative mean for a general sample of U.S. adults is 26 with a standard deviation of 12...a full-scale RCI-10 (mean) score of 38 or higher (out of a possible score of 50) would justify considering a person to be highly religious" (p.94). Even though participants in this study did have a mean score that was

higher than that reported by Worthington et al., the mean score of 30.82 did not meet the criteria (mean score ≥ 38) necessary to be considered highly religious. Analysis revealed that participants in our study had an Intrapersonal RCI-10 mean of 19.63 ($SD = 5.68$) and an Interpersonal mean score of 11.18 ($SD = 4.87$). These results are within the range reported by Worthington et al. of Intrapersonal RCI-10 mean scores from 16.2 ($SD = 7.2$) to 28.5 ($SD = 1.8$) and Interpersonal RCI mean scores from 9.3 ($SD = 4.4$) to 14.5 ($SD = 5.2$).

Participants in this study had a mean SOC-13 score of 52.72. Eriksson and Lindström (2006) reviewed 458 scientific publications and 13 doctoral theses that used the SOC-13 scale. They report that the range for the SOC-13 mean score was 35.39 to 77.60 ($SD .10$ – 13.80). Kattainen, Meriläinen, and Sintonen (2006) used the SOC-13 in a study of 439 male and 176 female patients with coronary artery disease. The researchers administered the SOC-13 to two different groups of patients, those receiving coronary artery bypass grafting (CABG) and those receiving percutaneous transluminal coronary angioplasty (PTCA). The SOC-13 measurements were taken at three different points in time, before the procedure (CABG or PTCA), six months following the procedure, and twelve months following the procedure. The mean scores for the CABG participants were: 70.22, at time one; 70.10, at time two; and 71.01, at time three. For the PTCA participants the mean scores were: 73.60, at time one; 68.70, at time two; and 67.44, at time three. The mean scores from that study were somewhat higher than the mean for our study. Kattainen et al. used tertiles to “estimate sense of coherence so that the score of 13-38 represents poor, 39-65 moderate, and 66-91 strong sense of coherence” (p. 23).

Using Kattaien et al.'s method of quantification, participants in this study could be classified as having a moderate level of sense of coherence.

Tiegs et al. (2006) report that male caregivers of stroke patients, who participated in their study, scored significantly higher ($p < .05$) than female caregivers on the Comprehensibility subscale of the SOC-13 and that the differences in the mean scores on the Meaningfulness subscale and total SOC-13 were very close to reaching significance ($p = .053$ and $p = .054$, respectfully). The mean score for the participants in the study by Tiegs et al. were as follows: for the SOC-13, mean score for men was 74.63 ($SD = 9.04$) and women was 69.35 ($SD = 9.26$); for Comprehensibility, men was 27.68 ($SD = 4.26$), women was 24.77 ($SD = 4.84$); Manageability, men was 22.42 ($SD = 3.25$), women was 21.81 ($SD = 3.38$); and Meaningfulness, men was 24.53 ($SD = 2.55$) and women was 22.77 ($SD = 3.28$). The male participants in our study did score higher than the female participants on the SOC-13 and its subscales (Table 6), however the only significant difference was noted in the mean scores of the Comprehensibility subscale ($p = .02$). All of the mean scores for all participants were lower than those reported by Tiegs et al.

Findings According to Study Aims

Aim 1

The first aim of this study was to determine the relationships among the specific variables (physiological, psychological, sociocultural, developmental, and spiritual) of the Neuman Systems Model. Pearson Correlations were run on the continuous data to determine if there were significant correlations between the dependent physiological

variables (current rHCMSS, cumulative rHCMSS, lowest CD4⁺ Cell count, most recent CD4⁺ count, lowest CD4⁺ percent, most recent CD4⁺ percent, and viral load) and the independent spiritual variables (SWBS, EWB, RWB, Positive RCOPE, Negative RCOPE, RCI-10, Intrapersonal RCI-10, and Interpersonal RCI-10), psychological variable (SOC-13 and the Manageability, Meaningfulness, and Comprehensibility subscales), and the developmental variable (age). There was a significant negative relationship between EWB and the current rHCMSS ($p = .04$, $-.328$). There were also significant negative relationships between the current rHCMSS and the total SOC-13 score ($p = .01$, $-.420$), the Meaningfulness subscale of the SOC-13 ($p = .00$, $-.515$), and the Comprehensibility subscale of the SOC-13 ($p = .02$, $-.376$). The subscale, Interpersonal RCI-10, was the only independent variable that had a significant relationship with time since HIV diagnosis ($p = .03$, $.349$). Significant negative correlations were observed between RWB and both age ($p = .01$, $-.394$) and age at time of diagnosis ($p = .01$, $-.412$). There was also a significant positive correlation between age and the cumulative rHCMSS ($p = .03$, $.344$). Other significant correlations are displayed in Table 8.

The associations among the other independent variables were also explored. Blocking the participants into two groups by income, a *t*-test analysis revealed that participants having an annual household income of less than \$10,000 had a significantly higher current rHCMSS mean score ($p = .018$) than those with annual household incomes of greater than \$10,000. They also had significantly lower mean scores on the SOC-13

Table 8: Correlations Between Independent and Dependent Variables

	Current rHCMSS	Age	SOC-13	MEAN	SWBS	EWB	RWB
Current rHCMSS							
<i>R</i>			-.420**	-.515**		-.328*	
<i>p</i> (2-tailed)			.008	.001		.041	
<i>N</i>			39	39		39	
SWBS							
<i>R</i>			.661**	.688**			
<i>p</i> (2-tailed)			.000	.000			
<i>N</i>			39	39			
EWB							
<i>R</i>	-.328*		.659**	.606**			
<i>p</i> (2-tailed)	.041		.000	.000			
<i>N</i>	39		39	39			
RWB							
<i>R</i>		-.394	.452**	.575**			
<i>p</i> (2-tailed)		.013	.004	.000			
<i>N</i>		39	39	39			
SOC-13							
<i>R</i>	-.420**				.661**	.659**	.452*
<i>p</i> (2-tailed)	.008				.000	.000	.004
<i>N</i>	39				39	39	39
MEAN							
<i>R</i>	-.515**				.688**	.606**	.575*
<i>p</i> (2-tailed)	.001				.000	.000	.000
<i>N</i>	39				39	39	39
COMP							
<i>R</i>	-.376*				.559**	.591**	.338*
<i>p</i> (2-tailed)	.018				.000	.000	.035
<i>N</i>	39				39	39	39
NegRCOPE							
<i>R</i>			-.418**	-.333*		-.378*	
<i>p</i> (2-tailed)			.008	.038		.018	
<i>N</i>			39	39		39	

Note. SOC-13 = Sense of Coherence Questionnaire: Short Form; MEAN = Meaningfulness; COMP = Comprehensibility; SWBS = Spiritual Well-Being; EWB = Existential Well-Being; RWB = Religious Well-Being; NegRCOPE = Negative Religious Coping.

* $p < .05$

** $p < .01$

scale ($p = .004$), Meaningfulness subscale ($p = .002$), and Comprehensibility subscale ($p = .004$); the association approached significance with the mean Manageability subscale score ($p = .053$). An analysis of variance (ANOVA) demonstrated significant associations between relationship status and the SOC-13 scale, Manageability subscale, and the Comprehensibility subscale (see Table 9). The analysis also revealed that participants who had been widowed or divorced scored significantly lower on the SOC-13 and on the Manageability subscale. Comprehensibility for widowed or divorced participants was originally significant but after adjusting for multiple comparisons, the significance dropped from .056 to .070.

Table 9: *Relationships Between Marital Status, SOC-13, Manageability, and Comprehensibility*

Dependent Variable	Relationship Status (A)	Relationship Status (B)	Mean Difference (A-B)	p
SOC-13	Other	Single	-18.083*	.042
		Married	-21.167*	.045
MANG	Other	Single	-6.458*	.024
		Married	-8.625*	.010
COMP	Other	Single	-6.750	.070
		Married	-8.333	.056

Note. SOC-13 = Sense of Coherence Questionnaire: Short Form; MANG = Manageability; COMP = Comprehensibility; Other = Divorced, separated, or widowed.
* $p < .05$

Aim 2

Multiple regression analysis was conducted to determine the extent to which the group of independent variables (psychological, sociocultural, developmental, spiritual, and time since diagnosis) taken together, predicted the physiological dependent variable of health status, which was the second aim of the study. The measure that best reflected the unique properties of each of the independent variables and had the strongest relationship with the physiological variable was chosen for inclusion in the final model used to address this aim. The measures chosen for the model were as follows: for developmental, age; for sociocultural, income; for psychological, the Meaningfulness subscale of the SOC-13 scale; for spiritual, the Existential Well-Being subscale of the SWBS, and for physiological, the current rHCMSS score. Using these variables in the model, 28.3% of the variance was explained ($p = .027$). When the number of years since being diagnosed with HIV-Disease was added to the model the amount of variance explained increased to 32.4% ($p = .031$). This is represented in Table 10, Model 1.

Aim 3

The third aim of this study was to determine the relationship between spirituality and the physiological status of PLWHA, after controlling for the psychological, sociocultural, and developmental variables. The EWB scale was the spirituality variable that had the strongest correlation with the physiological variable and was chosen to represent the spirituality variable. After adjusting for age, income, and meaning the spiritual variable (EWB) was not significantly associated ($p = .709$) with the

Table 10: *Regression Analyses for Independent Variables' Ability to Predict Health Status in People Living With HIV-Disease*

	Models					
	1	2	3	4	5	6
Coefficients of Fitted Models						
Intercept	20.367	18.892	25.880	25.574	17.121	19.709
Age (β)	-.027	.050				
Income (β)	5.098	4.886			7.784	4.765
MEAN (β)	-.649	-.553		-.787		-.638
EWB (β)	.045	-.070	-.330		-.257	
EWB p -value	.818	.709	.041*		.097	
Years Diagnosed	.261					
Model Summary Statistics						
R^2	.324	.283	.108	.243	.218	.279
Model p -value	.031*	.027	.041*	.002**	.015*	.004**

Note. The Current Revised HIV Center Medical Staging Scale Scores is the dependent, physiological variable representing Health Status; Age = Current age; Income = Participants' annual household income; MEAN = Meaningfulness; EWB = Existential Well-Being; Years Diagnosed = Number of years diagnosed with HIV-Disease.

* $p < .05$

** $p < .01$

physiological variable (current rHCMSS); refer to Table10, Model 2. The time since diagnosis variable was then added to the model and the spiritual variable still did not have a significant association with the physiological variable ($p = .818$) when controlling for the other variables.

Aim 4

The fourth aim of this study was to determine the relative importance of spirituality in explaining the health status of PLWHA. When the independent variable, EWB (Table10, Model 3) alone was entered into the regression model, it was found to explain 10.8% ($p = .041$) of the dependant variable (the current rHMCSS score). A stepwise regression modeling procedure was then performed in which all of the independent variables, including time since HIV diagnosis was made, and it was revealed that the best single predictor was the Meaningfulness variable. Meaningfulness explained 24.3% ($p = .002$) of the physiological variable (refer to Table 10, Model 4).

Aim 5

Further analyses were performed using Regression Modeling to determine if Religious Coping had a moderating effect on spiritual well-being, which is the fifth aim of our research study. In the first analysis, Positive and Negative RCOPE were added to a model containing only EWB. The amount of variance explained increased from 10.8% to 12.6% and EWB remained significant ($p = .035$); refer to Models 1 and 2, Table 11.

Table 11: *Moderating Effects of Religious Coping on the Ability for Spiritual Well-Being to Predict Health Status in People Living With HIV-Disease*

	Models				
	1	2	3	4	5
Coefficients of Fitted Models					
Intercept	25.880	30.474	23.201	24.202	25.465
PosRCOPE (β)		-.035	-.032		-.127
NegRCOPE (β)		-.296	-.677	-.635	-.634
Age (β)			.128		
MEAN			-.539		
Income (β)			6.614	9.499	9.653
EWB (β)	-.330	-.382	-.179	-.359	-.347
EWB <i>p</i> -value	.041*	.035*	.352	.027*	.036*
Model Summary Statistics					
R^2	.108	.126	.367	.294	.298
Model <i>p</i> -Value	.041*	.189	.024*	.009**	.020*

Note. The Current Revised HIV Center Medical Staging Scale Scores is the dependent, physiological variable representing Health Status; PosRCOPE = Positive Religious Coping; NegRCOPE = Negative Religious Coping; Age = Current age of participant; MEAN = Meaningfulness; Income = Annual income; EWB = Existential Well-Being.

* $p < .05$

** $p < .01$

However, when Positive and Negative RCOPE were added to the full model, the amount of variance explained increased from 28.3% to 36.7% (Model 3, Table 11) and EWB was no longer significant ($p = .352$). When the years since diagnosis was added to the full model, which also included Positive and Negative RCOPE, the amount of variance explained increased to 37.8%; EWB ($p = .569$) was not significant in this model.

To determine if the interaction of religious coping and EWB accounted for additional variance in the outcome variable beyond that explained by EWB alone, a separate analysis was undertaken in which the interaction of the religious coping variables and EWB were introduced into various models. When EWB, Positive RCOPE, and the interaction of Positive RCOPE and EWB were entered into a model, 12.7% ($p = .185$) of the variance was explained (Table 12, Model 1). When EWB, Negative RCOPE, and the interaction of Negative RCOPE and EWB were entered into a model, 14.4% ($p = .138$) of the variance was explained (Table 12, Model 2). However, neither the interaction of Positive RCOPE and EWB or the interaction of Negative RCOPE and EWB were statistically significant. However, a significant association had been noted between income and rHCMSS ($p = .018$), with those whose annual household income was \$10,000 or less having a higher rHCMSS. Therefore, a second model was tested in which an adjustment for income was included (Table 12, Model 3); this model explained 32.9% ($p = .011$) of the variance demonstrating that Negative RCOPE did have a moderating effect.

Table 12: *Interaction of Religious Coping and Existential Well-Being in Predicting Health Status*

	Models				
	1	2	3	4	5
Coefficients of Fitted Models					
Intercept	40.106	39.687	36.832	33.407	34.130
PosRCOPE (β)	-1.073				
NegRCOPE (β)		-1.616	-2.436	-.410	-1.546
MEAN				-.859	-.488
Income (β)			10.132		7.407
EWB (β)	-.660	-.589	-.634	-.080	-.334
EWB <i>p</i> -value	.124	.050*	.022*	.805	.329
EWBxPosRCOPE (β)	.025				
EWBxNegRCOPE (β)		.030	.041	-.001	.020
Model Summary Statistics					
R^2	.127	.144	.329	.302	.368
Model <i>p</i> -Value	.185	.138	.011*	.013*	.011*

Note. The Current Revised HIV Center Medical Staging Scale Scores is the dependent, physiological variable, Health Status; PosRCOPE = Positive Religious Coping; NegRCOPE = Negative Religious Coping; MEAN = Meaningfulness; Income = Annual household income; EWB = Existential Well-Being; EWBxPosRCOPE = Interaction of EWB and PosRCOPE; EWBxNegRCOPE = Interaction of EWB and NegRCOPE.

* $p < .05$

Since the Stepwise Regression analysis had shown that Meaningfulness was the most significant single predictor, a model was tested which included Meaningfulness, EWB, Negative RCOPE, and the interaction of EWB and Negative RCOPE; 30.2% ($p = .013$) of the variance was explained in that model (Table 12, Model 4). When an adjustment for income was included, 36.8% ($p = .011$) of the variance was explained (Table 12, Model 5). Based on these analyses, the model that included EWB, Negative RCOPE, and the interaction of Negative RCOPE and EWB in which the adjustment for income had been made was chosen as the one which best explained how much spirituality contributed to health status in PLWHA.

Summary of Results

Demographic Findings

The mean age of the 39 participants in this study was 44.8 years. The majority of the participants were Black ($n = 27, 69\%$); 48.7% ($n = 19$) were male and 5.1% ($n = 2$) were transgender. The greatest proportion of the participants was single ($n = 24, 61.5\%$) and 23 (59%) were classified in the category of C3 according to the CDC guidelines for HIV infection classification (CDC, 1992). The length of time of diagnosis with HIV-Disease ranged from 1-27 years; 11 (28.2%) had been diagnosed with the disease between 16 and 20 years and 2 (5.1%) had been diagnosed for more than 20 years. A large proportion of participants ($n = 22, 56.4\%$) reported that they had been diagnosed with a mental health problem. Twenty-four participants (61.5%) reportedly had annual household incomes of less than \$10,000 with a significantly ($p = .02$) higher proportion

of female than male participants having incomes within that range. Twelve (44.44%) participants reported they had been exposed to HIV-Disease through heterosexual contact, 11 (40.74%) from homosexual contact, and 4 (14.81%) reported having been exposed by both sexual contact and intravenous drug usage.

A majority of the participants ($n = 30$, 76.9%) stated they were Christian and 30 (76.9%) reported they prayed at least once per day. Seventeen (43.6%) stated they attended a place of worship at least once a week, however, 12 (30.8%) indicated they did not attend any place of worship.

Spiritual and Religious Instrument Scores

The SWBS mean score for participants in our study was 94.35, which falls within the upper normal range of previously reported scores. The mean score for the Negative RCOPE (6.15) was higher than those reported by other researchers working with people with life-threatening diseases other than HIV/AIDS and lower than that found by Cotton et al. (2006) in a study with participants that did have HIV-Disease. Even though participants in this study had a mean RCI-10 score (30.82) that was higher than that reported by Worthington et al. (2003), they did not meet the criteria Worthington et al. state is necessary to be considered highly religious. College students were the participants in four of the six studies cited by Worthington et al. and the majority of the participants in all six studies were Caucasian females. These demographic factors might account for some of the differences in scores for participants in our study. Using Kattaien et al.'s (2006) method of quantification, participants in this study could be classified as having a

moderate level of Sense of Coherence (mean = 52.72) with male participants mean Comprehensibility subscale score being significantly ($p = .02$) higher than that of the female participants.

Findings Related to Study Aims

Analysis of the relationships among specific variables (physiological, psychological, sociocultural, developmental, and spiritual) of the NSM revealed that there were significant inverse relationships between the current rHCMSS and the EWB scale ($p = .04$, $-.328$), the total SOC-13 ($p = .01$, $-.420$), the Meaningfulness subscale of the SOC-13 ($p = .00$, $-.515$), and the Comprehensibility subscale of the SOC-13 ($p = .02$, $-.376$) mean scores. Significant negative correlations were observed between RWB and both age ($p = .01$, $-.394$) and age at time of diagnosis ($p = .01$, $-.412$). There were significant positive correlations between age and the cumulative rHCMSS ($P = .03$, $.344$) and between Interpersonal RCI-10 and time since HIV diagnosis ($p = .03$, $.349$).

Participants having an annual household income of less than \$10,000 had a significantly higher current rHCMSS score ($p = .018$). They also had significantly lower mean scores on the SOC-13 scale ($p = .004$), Meaningfulness subscale ($p = .002$), and Comprehensibility subscale ($p = .004$). The income also approached a significant negative association with the Manageability subscale ($p = .053$) mean score. Significant associations were also noted between relationship status and the SOC-13 scale, Manageability subscale, and the Comprehensibility subscale mean scores; participants

who had been divorced or widowed scored lower than those who were either single or married.

The measures, which best reflected the unique properties of each of the independent variables were age, income, the Meaningfulness subscale of SOC-13, and the Existential Well-Being subscale of SWBS; the current rHCMSS score was selected as the dependent variable. Using these variables in a model, 28.3% of the variance was explained; this was significant at the .027 level. When the number of years since being diagnosed with HIV-Disease was added to the model, the amount of variance explained increased to 32.4% ($p = .031$).

After adjusting for age, income, and meaning, in the full model the spiritual variable (EWB) was not significantly ($p = .709$) associated with the physiological variable (current rHCMSS), even after “time since diagnosis” was added to the model ($p = .818$). However, a model containing the spirituality variable (EWB) alone explained 10.8% ($p = .041$) of the current rHCMSS score. A stepwise regression model revealed that the best single predictor of health status (current rHCMSS score) was the Meaningfulness variable, which explained 24.3% ($p = .002$) of the physiological variable.

EWB, Negative RCOPE, and the interaction of Negative RCOPE and EWB were entered into a model to determine if religious coping had a moderating effect on health status and spiritual well-being; 14.4% ($p = .138$) of the variance was explained by that model and EWB remained significant ($p = .050$). However, a significant association had been noted between income and Current rHCMSS ($p = .018$), with those whose annual household income being \$10 thousand or less having a higher rHCMSS. In addition,

when an adjustment for income was made, Negative RCOPE did have a moderating effect. The subsequent model explained 32.9% ($p = .011$) of the variance and EWB remained significant ($p = .022$). This final model was chosen as the one which best explains how much spirituality contributes to PLWHA.

Discussion and Implication of Findings

Introduction

The results of the data analyses presented in chapter four are discussed in this chapter. The findings as they relate to each of the research aims are examined separately within the context of relevant theory and research. The implications of these findings are explored as they relate to current and future research, practice, and policy. Finally, the strengths and limitations of the study are addressed.

Discussion

Demographic Findings

The mean age of the 39 participants in this study was 44.8 years with the greatest proportion being between the ages of 40 and 49 (59%). This sample was slightly older than the PLWHA population of the state of Virginia; according to the Virginia Department of Health (VDH), “At the end of 2006, ...people between the ages of 30-39 (39%) made up the largest group of living cases of HIV/AIDS,” (2007, p. 16). The VDH stresses that, “HIV/AIDS affects older adults differently than younger adults” (p. 41); therefore, the participants in this study could be at risk for greater HIV-associated health problems than the general Virginia population. Persons of African-American descent accounted for 69% (n = 27) of the participants in this study, which is very close to the

percentage for the state (64%). Of those participating, 48.7% ($n = 19$) were male, whereas for the state, 72% of the total diagnosed cases of HIV/AIDS in 2006 were men.

The majority of the participants ($n = 28$, 71.8%) had at some point since their diagnosis experienced $CD4^+$ counts of less than 200 cells per mm^3 , a condition that placed them at risk for severe, life-threatening opportunistic illnesses. Over half of the participants in this research study ($n = 23$, 59%) were classified in the category of C3 according to the CDC guidelines for HIV infection classification (CDC, 1992), which indicated that they had not only experienced $CD4^+$ counts of less than 200 cells per mm^3 but had also been diagnosed with an AIDS indicator condition. The length of time since being diagnosed with HIV-Disease ranged from 1-28 years (mean = 11.25 years, $SD = 6.67$); 11 (28.2%) had been diagnosed with the disease between 16 and 20 years and 2 (5.1%) had been diagnosed for more than 20 years.

A large proportion of participants in this study ($n = 22$, 56.4%) reported they had been diagnosed with a mental health problem; this information was obtained as part of the demographic questionnaire and did not represent documented medical diagnoses. However, this finding was similar to that of Treisman and Angelino (2004) who reported that of 250 patients surveyed at a Johns Hopkins HIV/AIDS Care Program, 54% were diagnosed with an Axis I psychiatric disturbance during their first appointment for HIV care; that number reflects diagnoses other than substance use disorders, such as schizophrenia, depressive, bipolar, and anxiety disorders. The investigators emphasize that HIV-Disease not only causes psychiatric disorders but may also exacerbate pre-existing disorders. Psychiatric disorders may also be a contributing factor to an increased

risk for acquiring HIV-Disease by decreasing one's ability to reduce risky behaviors and may worsen someone's prognosis once infected.

Treisman and Angelino (2004) note that AIDS dementia has been diagnosed in patients with CD4⁺ counts of less than 200 cells per mm³ and that minor cognitive-motor disorder (MCMD) or a mild neurocognitive disorder has been known to emerge in earlier stages of HIV-infection. MCMD prevalence data are variable with as much as a 60% prevalence rate noted by the time of AIDS diagnosis. Some examples of MCMD symptoms are: difficulty learning or recalling new information, impaired executive functioning skills, and limited attention span and/or speed of information processing. In a study with 129 PLWHA, Gibbie et al. (2006) found that higher levels of depression correlated significantly ($r = -0.31, p = -0.006$) with decreased spatial working memory scores, an ability which might also be associated with MCMD. Although this study did not collect data on the specific mental health diagnosis of the participants, Gibbie et al. state that prevalence rate for depression is approximately 50% in PLWHA, whereas Alegria et al (2006) report a depression rate of 36% and a dysthymia diagnosis rate of 26.5%. As noted, approximately 72% of the participants in our study had at some point experienced CD4⁺ counts of less than 200 cells per mm³ and 59% had experienced a serious AIDS-indicator condition. Therefore, given the findings of these cited researchers, the large number of participants with mental health problems encountered in this study is not surprising.

The VDH (2007) reports that 10% of all households in Virginia were living in poverty in 2006; the US Census Bureau (2008) gives the poverty threshold for one

person, under the age of 65 years, as \$10,787. Twenty-four (61.5%) of the participants in this study reportedly had household annual incomes of less than \$10,000; 18 (46.15%) had more than one person living in their household. A significantly ($p = .02$) higher proportion of female than male participants had incomes within the poverty range; the Virginia statistics also showed that the annual income of females was approximately \$10,000 less than that of males. Unfortunately, the VDH reports that there is no consistent collection of socioeconomic data associated with routine HIV surveillance and therefore it is impossible to estimate the impact of poverty on the prevalence of the disease.

Twelve (44.44%) participants in this study reported they had been exposed to HIV-Disease through heterosexual contact, 11 (40.74%) from homosexual contact, and 4 (14.81%) reported having been exposed by both sexual contact and intravenous drug usage. These findings were somewhat different from the statewide statistical data as reported by the VDH (2007), which indicate that the largest proportion (56%) of HIV/AIDS diagnoses in 2006 were among men who had sex with men. For the state of Virginia, heterosexual contact (27%) was the second leading cause of HIV-Disease and injection drug use was third (8%).

A majority of the study's participants ($n = 30$, 76.9%) stated they were Christian. This was slightly less than the findings of the General Social Survey (GSS) (2006) in which approximately 85% of United States respondents (all races, gender, income level, and geographic areas) reported that his or her religion was either Protestant or Catholic. Of the participants in our study, 30 (76.9%) reported they prayed at least once per day;

this was comparable to the findings of the GSS, which reported that approximately 26.6% of those surveyed prayed several times a day and 30.3% prayed once a day. The frequent usage of prayer has also been reported in previous research studies (Dunn & Horgas, 2000; Guillory et al., 1997; Martin et al., 1995; Meisenhelder, 2003). Seventeen (43.6%) of the participants in our study stated they attend a place of worship at least once a week, however, 12 (30.8%) indicated they do not attend any place of worship; these findings were similar to those of Coleman and Holzemer (1999), who found that 45% of African-American men and women with HIV-Disease who participated in their study attended church on a regular basis or more than once per week.

Study Aims

Aim 1

The first study aim was to determine the relationships among specific variables (physiological, psychological, sociocultural, developmental, and spiritual) of the NSM. Neuman (2002) proposes that, “the adjustment of the five client system variables to environmental stressors determines client stability or usual wellness level” (p. 17). Neuman’s views regarding coping with stress were heavily influenced by the work of Richard Lazarus (DeLongis, Folkman, & Lazarus, 1988). Lazarus recognized that stress was a potential causal factor in the development of illnesses. Tuck, Alleyne, and Thinganjana (2006) note that current research is also demonstrating a strong association between spirituality and stress management. They emphasize that spirituality facilitates an individual’s integration of coping mechanisms and their ability to derive meaning

from experiences. Tuck et al. state that a conceptual connection is apparent between Lazarus's model of coping with stress and the potential beneficial effects of spiritual growth on reducing stress-related outcomes.

The SWBS mean score for participants in our study was 94.35, which falls within the upper normal range of previously reported scores. The most recent mean CD4⁺ count for participants was 420.74 and the mean current rHCMSS was, 11.51. This mean CD4⁺ count was in the mid-level range according to the CDC classification system for HIV infection and the mean current rHCMSS score was indicative of the presence of minor, but not clinically significant, symptoms. The mean EWB (subscale of SWBS) score had a significant inverse relationship with the mean current rHCMSS values ($p = .04$, -0.328). The rHCMSS is an "ordinal-level physical illness measure" that provides "a useful marker of current health status for both clinical and research purposes" (McCain et al., 1998, pp. 22, 23) in PLWHA. This objective symptomatology rating scale rates HIV-associated signs and symptoms from zero through 39. A rating of zero indicates that the patient is asymptomatic and a rating of 39 indicates AIDS defining illness with severe complications. The findings in this study indicate that increased EWB was associated with decreased current HIV-related symptoms.

The results of this study are consistent with previous research findings that demonstrate the positive health effects of higher levels of EWB. Carson and Green (1992) found that SWBS ($r = 0.417$; $p < .001$) and each of its subscales were significantly correlated with hardiness and Tuck, McCain and Elswick (2001) found that the SWBS subscale, EWB, was significantly correlated with physical well-being ($r = 0.41$, $p = .002$)

and functional well-being ($r = 0.52, p = .0001$). The moderate level of current health status observed in the study participants may be associated with the relatively high SWBS scores.

Only one previous study was identified in which the EWB subscale and immunologic values had been used to explore health status in PLWHA. McCain et al. (2007) conducted an intervention study for the purpose of testing the efficacy of three 10-week stress management intervention groups (cognitive-behavioral relaxation training [RLXN], focused tai chi training [TCHI], and spiritual growth groups [SPRT]). The researchers report that no significant changes were evident in the pre-to post-intervention SWBS scores for any of the study intervention groups, which they state could indicate a ceiling effect. Nevertheless, they found that the SPRT intervention group, in comparison to the control group, had higher lymphocyte proliferative function, higher natural killer cell cytotoxic function (42.81 LU vs. a decrease of -38.28 LU), higher levels of IFN- γ production (215.38 vs. -196.14), and significantly higher levels of IL-4 production (0.28 vs. -0.26) than control group participants. The SPRT group also had an increase (838.5 vs. -1698.8) in the physiological variable of lymphocyte proliferation between the pre-intervention and the 6-month follow-up visits. McCain et al. conclude that the findings indicate “the interventions were associated with enhancement in immune system functional status” and that the increased natural killer cell function for the SPRT group “marked an additional functional enhancement” (p. 20). The investigators did not document any direct association between EWB scores and the immune measures tested. Given the improvements in the immune measures following the SPRT intervention, the

effectiveness of the SWBS to measure changes in spirituality over time could be questioned.

The mean score for the Negative RCOPE (6.15) in this study was higher than those reported by other researchers working with other life-threatening diseases but lower than that found by Cotton et al. (2006) in their work with people with HIV-Disease. Pargament, Koenig, et al. (2004) describe negative religious coping methods as those, which reflect a religious struggle. They go on to state that negative religious coping methods grow out of a more tenuous relationship with God, are associated with a more ominous life view, and reflect a sense of disconnectedness with a religious community. Pargament et al. (2001) identified an increase in mortality risk associated with religious struggle and concluded that some forms of religiousness may even increase the risk of death. They proposed that one of the causes could be a decline in immunologic functioning. In a 1998 study, Pargament et al. found that greater use of negative religious coping method was related to increased Post Traumatic Stress Disorder symptoms, higher levels of psychosomatic symptoms, a greater number of medical diagnoses, and poorer physical, functional, and cognitive health status.

In this study there was no significant correlation between Negative RCOPE and the current rHCMSS. The Brief RCOPE tool instructs the participant to answer questions in regards to what ways he or she “coped with the diagnosis of being HIV positive” and does not provide instructions regarding the time period for which those methods were used. Since the past tense of the word cope is used in the instructions, the instrument does not necessarily capture the current means of coping. The times since being diagnosed

with HIV-Disease varied from 1-28 years (mean = 11.25) for participants in this study. These factors may have had an impact on the RCOPE scores and the related findings. Pargament et al. (1998) state that, “religious pain and discontent embodied in negative religious coping may be short-lived and relatively inconsequential” (p. 721). They caution that longitudinal studies are important to fully assess the impact of religious coping. Because of the wide time range since initial diagnosis of HIV-Disease in the study participants and the possibility that the use of religious coping over time may have varied significantly, longitudinal studies in this area are clearly indicated.

The participants in this study are classified as having a moderate level of Sense of Coherence (mean = 52.72) according to Kattaien et al.’s (2006) method of quantification. The findings from this study indicate significant inverse relationships between the current rHCMSS and the total SOC-13 ($p = .008$, $-.420$), the Meaningfulness subscale of the SOC-13 ($p = .001$, $-.515$), and the Comprehensibility subscale of the SOC-13 ($p = .018$, $-.376$) mean scores. Antonovsky (1979) theorized that the stronger the sense of coherence of an individual, the more adequately he or she would be able to cope with the stressors that are always present in life and subsequently the more likely he or she would be able to maintain or improve his or her position on the health ease/dis-ease continuum. The findings from this study support Antonovsky’s theory.

The total SOC-13 mean score for males in our study was higher than that of the female participants but not at a significant level ($p = .080$). However, male participants’ mean Comprehensibility subscale score was significantly ($p = .02$) higher than that of the female participants. Comprehensibility refers to the ability to perceive stimuli as making

cognitive sense; information is experienced as being ordered, consistent, and clear versus accidental and inexplicable. The person with a low sense of comprehensibility feels that, invariably, unfortunate things will always happen to him or her; those high on the measure will feel that life experiences can be coped with and its consequences will be bearable.

Many previous studies, with participants other than those living with HIV-Disease (Langeland et al., 2006; Lutgendorf, Vitaliano, Tripp-Reimer, Harvey, & Lubaroff, 1999; Pallant & Lae, 2002; Read, Aunola, Feldt, Leinonen, & Ruoppila, 2005; Sandén-Eriksson, 2000), reported no significant difference in SOC scores according to gender. However, in their 2002 study with PLWHA, Cederfjäll et al. reported that women scored significantly lower ($p \leq .05$) on the SOC than the men. Tiegs et al. (2006) conducted a study with men and women caregivers of stroke patients and found that the male caregivers' scored higher on Comprehensibility, $F(1, 48) = 4.65, p < .05$, than did female caregivers and that the total SOC and Meaningfulness scores approached significance.

Antonovsky (1987) cites several possible factors that could have negative impact on the formation of a strong SOC for women. Among those he listed are: women often work in devalued female jobs; the role of housewife as a socially devalued job; economic dependence upon a husband or poverty; and "the cultural definition of women as serving the needs, sexual and otherwise, of her master" (p. 109). Antonovsky states that these patterns are particularly present among women "whose burden is indeed greatest: the poor and working-class women" (p. 109).

Parpart, Rai, and Staudt (2002) contend that twenty-first century women continue to face many challenges; they state, “Working-class women and women from some ethnic and religious groups do not have the resources of time and money to be empowered through participation in collective action, or the costs of their participation is disproportionately high” (p. 7). On a legislative level, the minority positioning of women in government places constraints upon their ability to raise strategic issues for women. Although women are providers of many services in the labor market, they are often poorly paid and are rarely in control of large financial enterprises. Finally, women own very little of the world’s property so have limited access to financial or production markets.

Women and men of color face additional challenges in living with HIV-Disease. Buseh and Stevens (2006) state that HIV-infected African American women perceive stigma in the course of their daily lives and they are greatly at risk for internalizing that stigma. Buseh and Steven’s research revealed that African-American women encountered HIV-stigma that, when internalized, manifested itself as existential despair. They experienced shunning and callousness and were over-whelmed by feelings of shame and self-accusations. In another study, Buseh et al. (2006) discovered that African-American men perceived societal complacency about the seriousness of HIV-Disease and its effects on the African-American population. Some of the areas in which they experienced difficulties were: under funding of community support and services, distrust of government programs, stigmas in the African -American community, and differential care based on race, gender, and diagnosis. All of these challenges faced by men and

women of African-American descent contribute to a feeling of powerlessness. According to Buseh and Stevens, the stigma with which African-American PLWHA are confronted, contributes to a decrease in psychological functioning. As noted earlier, a significant portion of the participants in our study were below the poverty level with significantly more women than men having incomes in that range. This, in addition to the many sociological issues with which they are confronted, could help to explain why the female participants had lower mean scores on the SOC-13 and the Comprehensibility subscale.

Given the many challenges facing women with HIV-Disease, it is important to note further what Antonovsky (1987) says regarding SOC and health. Antonovsky cautions that before a person can mobilize his or her resources to deal with life's problems, he or she must be able to define the nature and dimensions of the problem and be able to make sense of it. The person with a weak SOC will make only a halfhearted attempt to cope with stressors because he or she will believe that chaos is inevitable. Antonovsky theorized that, "by managing tension well, the person with a strong SOC will indeed reinforce or improve his or her health status" (p. 152). It is interesting to note, in view of Antonovsky's theory that the male participants in our study not only had a significantly higher mean Comprehensibility score but also had a significantly ($p = .036$) lower mean current rHCMSS score, which was indicative of better current health status. In summary, there were strong negative correlations between the mean current rHCMSS score (for all genders) and the total SOC-13 ($p = .018, -.420$), the Comprehensibility ($p = .008, -.376$), and the Meaningfulness ($p = .001, -.515$) mean scores.

The findings regarding SOC and its correlation to health status in this study is significant. Numerous researchers have reported significant positive correlations between psychological health and SOC (Bayard-Burfield, Sundquist, & Johansson, 2001; Cederfjäll, Langius-Eklöf, Lidman, & Wredling, 2001; Eriksson & Lindström, 2006; Gibson & Parker, 2003; Hart, Wilson, & Hittner, 2006; Pallant & Lae, 2002; Read et al., 2005; Weissbecker et al., 2002) and between subjective health and SOC (Cederfjäll et al., 2001; Eriksson & Lindström, 2006; Pallant & Lae, 2002; Read et al., 2005; Richardson & Ratner, 2005; Suominen, Helenius, Blomberg, Uutela, & Koskenvuo, 2001). However, this study is unique because very few studies have explored specific immune functions in relation to SOC. A study by Nakamura et al. (2003), found significant positive correlations between SOC and Natural Killer Cell activity ($p \leq .05$) in 101 male office workers. In another study, Cederfjäll et al. (2002) explored the relationship between self-reported adherence to antiretroviral treatment and SOC in 99 PLWHA. They found that “SOC was the only variable predicting nonadherence ($p \leq 0.05$), the lower the SOC the more the missed doses” (p. 613) of the antiretroviral medication. As expected, “the nonadherent group had significantly lower CD4 cell count/mm³ and significantly higher HIV-1 RNA copies per milliliter than the adherent group” (p. 613). This study’s findings are consistent with Antonovsky’s theories and support the previous research findings regarding the relation of SOC to health status.

When examining health status and income, it was revealed that participants in this study who had an annual household income of less than \$10,000 had a significantly higher current rHCMSS score ($p = .018$) than those with incomes above that amount; this

rHCMSS score was indicative of poorer current health status. Virginia state surveys indicated that in 2006, “As the proportion of the population living in poverty increased, so did the age-adjusted incidence rates for chlamydia, gonorrhea, total early syphilis and HIV” (VDH, 2007, p. 11). Secondly, in the census tracts where the highest proportion of people lived below poverty level there was a 5.52 times increased risk for HIV. Not only do economic issues have impact on the health status of PLWHA but according to Van Gorp et al. (2007), medical conditions and psychiatric factors associated with HIV/AIDS may prevent PLWHA from maintaining adequate employment, thus possibly contributing to the low annual incomes seen in the participants in our study. Van Gorp et al. emphasize that although many of the physical symptoms such as neuropathy, fatigue, or diarrhea, which are associated with HIV and/or the antiretroviral medications used to manage the disease, are mild they are often distressing. These physical symptoms along with the accompanying psychological or spiritual distress can have impact upon employment.

Continuing with economic impact, it was demonstrated that participants whose annual household incomes were less than \$10,000 also had significantly lower mean scores on the SOC-13 scale ($p = .004$), Meaningfulness subscale ($p = .002$), and Comprehensibility subscale ($p = .004$). The income also approached a significant association with the Manageability subscale ($p = .053$) mean score. Antonovsky (1979) stressed the importance of what he referred to as, “generalized resistance resources” (GRR) in relation to SOC. He states that the extent to which these resources are available plays a crucial role in the ability of a person to move toward the healthy end of the health

ease/dis-ease continuum. According to Antonovsky, there are three types of GRRs: “adaptability on the physiological, biochemical, psychological, cultural, and social levels; profound ties to concrete, immediate others; and commitment of and institutionalized ties between the individual and the total community” (p. 100). Antonovsky (1987) mentions high intelligence, lots of money, and a clear ego identity as examples of GRRs and goes on to state that if one possesses such GRRs as these there will be consequences supporting the emergence of a strong SOC, and therefore health, as well as for other aspects of well-being. He proposed that positive correlations existed between the SOC and many facets of well-being. Furthermore, the extent to which GRRs created life experiences that gave rise to a strong SOC also directly promoted well-being.

Antonovsky states that being poor can debilitate a strong SOC. Given the potential relationship between one’s financial resources and one’s SOC as postulated by Antonovsky, our findings are not surprising. However, this finding is not corroborated by other studies that found no significant association between income and SOC (Lutgendorf et al. 1999; Read et al., 2005; Weissbecker et al. 2002). This study contributes to the area of research by raising several questions, such as: (a) does having HIV-Disease contribute to low SOC; (b) does a low SOC contribute to HIV-Disease; (c) does low income status contribute to a low SOC; (d) does a preexisting low SOC contribute to the low income status; (e) does low income status contribute to risky behavior associated with developing HIV-Disease; and (f) does a low SOC contribute to risky behavior associated with developing HIV-Disease.

Significant associations were also noted between relationship status and the SOC-13 scale, Manageability subscale, and the Comprehensibility subscale mean scores (refer to, Chapter 4, Table 9); participants who had been divorced or widowed scored lower than those that were either single or married. It is not surprising that participants who were married had higher mean scores, given the emphasis Antonovsky's (1979) placed upon one's ties to concrete, immediate others as noted above. Read et al. (2005) suggests that, "Marriage may enhance health in two ways: Those who marry may be healthier to begin with (selection), and marriage may influence the physical and psycho-social environment in which the individual lives (protection)" (p. 250-251).

In looking further at the effects of relationship status, Koropecykj-Cox (2005) cautions that several important factors must be considered when exploring the health effects of singleness versus being married. The roles of race and ethnicity, parental status, economic issues, and sexual orientation may also impact the consequences of marital status on health. Dion (2005) used US General Social Survey data from the period of 1972-2002 to explore the relationship between marital status and well-being. The survey used a 3-point rating scale with 1 indicating *very happy*, 2 indicating *pretty happy*, and 3 indicating *not too happy*; lower scores indicated greater happiness. The means scores from that survey were as follows: married participants, 1.68; never married, 1.92; widowed, 1.95; divorced, 1.99; and separated, 2.12. Race was an important factor and when accounted for, a small-to-medium size effect correlation (.24 for Whites, .18 for Blacks) was revealed between those who were married and those who were never-married.

Rook and Zettel (2005) also explore the benefits of marriage to physical health through a literature review. They found that the self-reported levels of health for married, widowed, and never-married individuals were significantly better than that of persons who were divorced, separated, or cohabitating. The difference in mortality rates was most pronounced between married and divorced individuals and least pronounced between married and those who never-married. Antonovsky (1979) suggests that social ties are indeed a GRR. Furthermore, he postulates that if isolation and the absence of social and community ties are crucial, they are to be interpreted as stressors. Antonovsky (1987) includes death of a family member and divorce as being two types of major life events that fit the definition of a stressor and therefore events to which there is no automatic adaptive response readily available. Antonovsky (1979) proposes that cataclysmic events, such as sudden widowhood, can weaken one's SOC. Conversely, however, those with a weak SOC, will have fewer resources with which to deal with such stressors. It may be that the added stress of having experienced a divorce or death of a spouse accounted for the fact that those participants that identified themselves as married or single scored higher on the SOC-13 (and its subscales) than did those who identified themselves as widowed or divorced.

Significant negative correlations were observed between RWB and age ($p = .01, -.394$). This was surprising given the findings of Moberg (2005) who states, "Since 1939 or earlier, survey research and public opinion polls have consistently found senior adults (past 65) to be highest on measures of religion and spirituality" (p. 15). However, Mickley et al. (1992) also found a negative correlation between age and RWB in a study

sample of women with breast cancer. A review of other research studies in which the RWB subscale of the SWBS was used did not indicate any significant differences in the scores according to age (Carson & Green, 1992; Carson, et al., 1990; Coleman, 2003a; Coleman, 2004; Coleman & Holzemer, 1999; McCain et al., 2007; Paloutzian & Ellison, 1982; Sherman et al., 2005; Tuck, McCain, & Elswick, 2001). However, various studies (Conner & Eller, 2004; Tuck, Pullen, & Lynn, 1997; Tuck, Pullen, & Wallace, 2001), which used a different instrument, which measured spiritual perspective, found that spirituality scores increased as the ages of participants increased. Therefore, the mixed findings may possibly be attributed to the sensitivity of the instruments utilized in the studies.

There were significant positive correlations between age and the cumulative rHCMSS ($p = .03, .344$) mean score. The CDC (2005) found that, “survival decreased as age at diagnosis increased among persons at least 35 years old” (p. 8) at the time of diagnosis. The VDH (2007) stresses that, “HIV/AIDS affects older adults differently than younger adults” (p. 41). Some of the reasons given for this difference are: they tend to have an increased number of co-morbid conditions, which may delay diagnosis and complicate treatment; they are less likely to request testing; symptoms may be mistaken for other diseases or an age-related condition; they are at greater risk for opportunistic infections; and they tend to develop AIDS more rapidly once they are HIV positive. Sackoff, Hanna, Pfeiffer, and Torlan (2006) also found that “mortality rate for HIV-related causes increase with age” (p. 401). Zingmond, et al. (2001) reported that prior studies had shown mixed results concerning whether the disease progressed more rapidly

in older persons; however, in their study they also found that older non-white participants experienced more rapid disease progression.

Participants in this study had a mean RCI-10 score (30.82) that was higher than that reported by Worthington et al. (2003), but did not meet the criteria (38 or higher) necessary to be considered highly religious. Koenig (2001), who has done extensive research in the area of religion and health, states that findings from his reviews of research that examined the relationship between immune and neuroendocrine function and religious practices “are consistent with the hypothesis that religious practices facilitate coping, thereby reducing stress-related hormone levels and improving immunity” (p. 325). Weaver, Flannelly, Flannelly, Koenig, and Larson (1998) also state that a variety of studies published over the past 25 years demonstrated a strong association between such activities as regular worship attendance, Scripture reading, or prayer, and positive mental health. Our study did not show a significant correlation between the current rHCMSS mean score and the RCI-10 ($p = .486$) or any of the spiritual practices addressed in the demographic data questionnaire. Our study findings thereby did not support the findings of Koenig and colleagues. The questions on the RCI-10 refer to activities such as making financial contribution to religious organizations, enjoying spending time with others of one’s religious affiliation, and working in the activities of one’s religious affiliation. Many of the participants ($n = 12, 30.8\%$) in this study indicated they did not attend a place of worship and this along with such factors as poverty, stigma associated with HIV-Disease, and poor health may have influenced the RCI-10 scores and therefore had impact on findings in this area.

There was a significant positive correlation ($p = .03, .344$) between the Interpersonal subscale score of the RCI-10 in this study and the number of years since an HIV diagnosis was made. Worthington et al. (2003) suggest that the Interpersonal subscale reflects largely behavioral aspects of religious commitment such as making financial contributions to the participant's religious organization and working in the activities of his or her religious organization. Narayanasamy (1995) found that PLWHA had strong emotional responses to institutional religion, characterized by anger, doubt and ambivalence. Hall (1998) also found that organized religion served as a barrier to spirituality until associated anger was ameliorated and that spiritual beliefs would decline prior to being strengthened in stigmatized and ill populations. The RCI-10 Interpersonal subscale findings in this study may be a unique characteristic of PLWHA because of the emotional and spiritual ambivalence experienced during the early phase of the disease, (as noted by Narayanasamy and Hall). However, Worthington et al. caution that the two subscales of the RCI-10 are "highly intercorrelated" (p. 94) and therefore they do not recommend using them separately in research at the present time.

Aim 2

Determining the extent to which the group of independent variables (psychological, sociocultural, developmental, and spiritual) of the NSM taken together predicted the physiological dependent variable of health status was the second aim of this study. Nueman (2002) envisioned all parts of the human system as being intimately interrelated and interdependent. The NSM deals with the occurrence of and possible

reaction to stressors and considers the simultaneous effects of the interaction of the five system variables. Neuman goes on to explain that no part of the system could be considered in isolation but must be viewed as part of the whole. A single part will influence the perception of the whole and the features or patterns of the whole influence the awareness of each system part. Neuman continues, “The interrelationships of variables...determine the nature and degree of system reaction or possible reaction to the stressor” (p. 13-14).

Analyses revealed that the measures, which best reflected the unique properties of the independent variables for our study were: age, income (which was dichotomized into those whose annual household income was above or below \$10,000), the Meaningfulness subscale of SOC-13, and the Existential Well-Being subscale of SWBS; the current rHCMSS score was identified as the dependent variable. Using these variables in a model, 28.3% of the variance in health status was explained; this was significant at the .027 level. When the number of years since being diagnosed with HIV-Disease was added to the model, the amount of variance explained increased to 32.4% ($p = .031$). These findings demonstrated that the independent variables chosen for the model were important to the current health status of the participants in this study and were supportive of Neuman’s theory.

Potter and Zauszniewski (2000), using a convenience sample of 47 adults with Rheumatoid Arthritis, examined the variables of the NSM. Their findings were similar to those of this study. Potter and Zauszniewski found that the physical, social, and emotional variables predicted a substantial amount of the variance in the general health

perception of the study participants ($R^2 = .18, p < .05$). When spirituality was added to their model the amount of variance explained increased to 20% ($p < .05$).

Aim 3

The third study aim was to determine the relationship between spirituality and the physiological status of PLWHA, after controlling for the psychological, sociocultural, and developmental variables in the model. After adjusting for age, income, and meaning, the spiritual variable (EWB) was not significantly ($p = .709$) associated with the physiological variable (current rHCMSS), even after “time since diagnosis” was added to the model ($p = .818$). This finding did not support those of Carson and Green (1992), Coleman (2003a), and Tuck, McCain, and Elswick (2001) in their work with PLWHA, which demonstrated significant associations with hardiness and physical and functional well-being. However, those investigators did not address discrete immune markers in their studies. Our findings regarding this aim will be discussed further under findings related to the fourth study aim.

Aim 4

The fourth study aim was to determine the relative importance of spirituality in explaining health status in PLWHA in comparison with the psychological, sociocultural, and developmental variables. Neuman (Neuman & Fawcett, 2002) postulates that each person is born with a spiritual energy force. She suggests that when this force is catalyzed by life events the energy becomes recognized within the thought patterns and these

thought patterns are positively affected. The body then, “becomes increasingly nourished and sustained through positive use of” this spiritual energy (p. 16). Previous research findings support Neuman’s theory that religion and spirituality may be essential components to health and well-being in individuals with HIV-Disease (Carson & Green, 1992; Carson et al., 1990; Ironson & Schneiderman, 2002).

In addressing the fourth study aim, first the spirituality variable (EWB) alone was entered into a model, which explained 10.8% ($p = .041$) of the current rHCMSS score. Then each of the other independent variables was entered as a single variable into models. When this was done, age explained 2.3% ($p = .358$) of the variance, annual household income explained 15.0% ($p = .018$), Meaningfulness explained 26.5% ($p = .001$), and time since diagnosis explained 0.8% ($p = .596$). A stepwise regression model was then performed and it revealed that the best single predictor of health status (current rHCMSS score) was the Meaningfulness variable, which explained 24.3% ($p = .002$) of the dependant variable.

As noted in chapter four, there was a significant positive correlation between EWB and the Meaningfulness subscale of the SOC-13 ($p = .000, .606$). It is not surprising that there would be strong correlations between the SWBS and the SOC-13 scales since developers of both scales obviously relied heavily on Frankl’s work when developing them. Both Antonovsky and Paloutzian and Ellison (1982) refer to Victor Frankl’s (1975) work, *The Unconscious God*. In this work, Frankl contends that the realms of religion and psychiatry were not mutually exclusive. He said,

A higher dimension, by definition, is a more *inclusive* one. The lower dimension is included in the higher one; it is subsumed in it and encompassed by it. Thus biology is overarched by psychology, psychology by noölogy, and noölogy by theology. (p. 13)

Frankl proposed that the noölogical dimension was defined as a, “uniquely human phenomena” and he “circumscribed this phenomenon in terms of ‘man’s search for meaning’” (p. 13). According to Frankl (1969/1988), the noölogical could also be defined as the spiritual dimension and was to be understood in terms of anthropology versus theology. Frankl went on to define religion as “man’s search for *ultimate* meaning” (1975, p. 13). Frankl theorized that, not only was the will to meaning a true manifestation of a person’s humanness, but also “a reliable criterion of mental health” (1975, p. 84). Frankl said, “Man’s search for meaning is the primary motivation in his life and not a ‘secondary rationalization’ of instinctual drives” (p. 121). He further states, “There is nothing in the world, I venture to say, that would so effectively help one to survive even the worst conditions as the knowledge that there is a meaning in one’s life” (p. 126).

Antonovsky’s (1987) SOC theory is also based on the question of how a person views his or her life. Do the stimuli, with which one is confronted, make sense (Comprehensibility)? Are the resources needed to meet one’s needs available and adequate (Manageability)? And, is it worth investing energy in dealing with the problems and demands associated with living; does one seek to find meaning in these difficulties (Meaningfulness)? Antonovsky admits that Frankl’s work influenced the choice of the title “Meaningfulness” for the subscales of the SOC instrument. Antonovsky states that

the Meaningfulness component represents the motivational element of the SOC and implies that a person is actively involved in the process of shaping his or her destiny. According to Antonovsky the meaningfulness component refers to the degree to which a person feels that life makes sense from an emotional perspective. Problems and demands of life are worthy of energy investment and are welcomed as challenges rather than unwanted burdens. Not only are such persons willing to invest energy in coping with their challenges but they are also determined to seek to find meaning in the experience and to overcome it “with dignity” (p. 19).

Paloutzian and Ellison (1982) developed the SWBS to measure two aspects of spiritual well-being. The RWB subscale was designed to measure religious well-being or one’s relationship to God. Paloutzian and Ellison contend that one’s religious beliefs can be a source of purpose and meaning and may be among the most powerful influences in life. The EWB subscale was designed to measure “one’s perception of life’s purpose and satisfaction apart from any specifically religious reference” (p. 231). It is clear when reviewing the definitions and descriptions associated with the Meaningfulness subscale of the SOC-13 and the EWB subscale of the SWBS, that there is an obvious overlap in what the scales measure (refer to Table 13). Rabin and Koenig (2002) even argue that the EWB subscale “directly measures psychological well-being” (p. 222) and that it should be expected that EWB would predict mental health. The strong correlation ($p = .000$, $r = .606$) between the scales could account for the reason that EWB and Meaningfulness did not explain significant variance in health status when the full model was tested in aim one but when entered separately into models they both explained significant variance.

Table 13: *The Meaningfulness Subscale of the Sense of Coherence Scale 13 Compared to the Existential Well-Being Subscale of the Spiritual Well-Being Scale*

Meaningfulness Subscale	Existential Well-Being Subscale
1. Do you have the feeling that you don't really care about what goes on around you?	20. I believe there is some real purpose for my life
4. Until now your life has had: No clear goals/or purpose at all --- Very clear goals/ and purpose	4. I feel that life is a positive experience
7. Doing the things you do every day is: A source of deep pleasure & satisfaction/a source of pain & boredom	8. I feel very fulfilled & satisfied with life
	12. I don't enjoy much about life
	16. I feel that life is full of conflict unhappiness
12 How often do you have the feeling there's little meaning in the things you do in your daily life?	18. Life doesn't have much meaning
	2. I don't know who I am, where I came from, or where I'm going
	6. I feel unsettled about my future
	10. I feel a sense of well-being about the direction my life is headed in
	14. I feel good about my future

Aim 5

The fifth aim of the study was to determine if religious coping had a moderating effect on health status and spiritual well-being. When EWB (representing the spiritual well-being variable), Negative RCOPE (representing the religious coping variable) and the interaction of Negative RCOPE and EWB were entered into a model, 14.4% ($p =$

.138) of the variance was explained and EWB remained significant ($p = .050$). However, a significant association had been noted between income and current rHCMSS ($p = .018$), with those whose annual household income was \$10,000 or less having a higher current rHCMSS score than participants with higher incomes. Therefore, an adjustment for income was entered into the model and Negative RCOPE was found to have a moderating effect in that model. The subsequent model explained 32.9% ($p = .011$) of the variance and EWB remained significant ($p = .022$). This final model was chosen as the one, which best explained how much spirituality contributed to health status in PLWHA.

To better understand the relationship between spirituality (as represented by EWB), religious coping, and health status in PLWHA, a brief review of stress theory is helpful. When a stressor is encountered, it results in the stimulation of the sympathetic-adrenomedullary system. As a result, epinephrine, norepinephrine, and enkephalins are released. “Simultaneously the hypothalaminc-pituitary-adrenocortical system is stimulated, leading to elaboration of corticotrophin (ACTH), endorphins, and cortisol” (McCain, Gray, Walter, & Robins, 2005, p. 322). The immediate consequence of this process is to facilitate adaptation to the stress-inducing situation. Numerous bi-directional relationships exist between the neuroendocrine and immune systems; these relationships are particularly important in PLWHA since the resulting impact upon the immune system may influence disease progression.

However, Tewes (1996) states it has long been recognized that the differences in reaction to the same stressor among different individuals is considerable and that the cognitive appraisal of the stressful situation is critical in modulating the severity of the

reaction to a stressor. Lazarus (2000) emphasizes that the “conceptual bottom line” in his theory regarding stress and coping is “the *relational meaning* that an individual constructs from the person-environment relationship. That relationship is the result of appraisals of the confluence of the social and physical environment and personal goals, beliefs about self and world, and resources” (p. 665). Folkman and Moskowitz (2000) emphasize that it is the appraisal or situational meaning, which shapes the emotions a person experiences in a stressful situation. Folkman and Moskowitz contend that appraised meaning is integral to the process of coping itself and traditionally, how people used meaning in the coping process has been considered an important part of reconstitution of global meaning following trauma. Neuman’s (2002) theory regarding stress is based on Lazarus’ theory and she concurs, “the client’s perception of each stressor and the nature of the encounter with the stressor determine whether the outcome or effect is beneficial or noxious” (p. 21).

Pargament, Koenig, and Perez (2000) offer further insight into how religious coping might have moderating effects on health status and spirituality. In their discussion of religious coping, they identify five key functions of religion in dealing with stress. Three of those functions are: (a) religion plays a critical role in the search for meaning; (b) when confronted with stressful events, religion offers many means by which to achieve a sense of mastery and control; and (c) religion also may facilitate a person in making major life transformations, such as giving up old objects of value and finding new sources of meaning. Pargament, McCarthy, et al. (2004) state that negative religious coping takes place when major life stressors presents a threat or challenge, not only to

physical and psychological health and well-being, but also to an individual's religious and spiritual world view.

To further explore the role of religious coping, Pargament, Koenig, Tarakeshwar, and Hahn (2001) studied survival rates in a group of medically ill persons, aged 55 years or older. Follow-up approximately 632 days following initial hospitalization showed that survivors had reported significantly ($p = .01$) lower levels of Negative RCOPE at baseline; the findings remained significant even after controlling for demographic, physical health, and mental health variables ($p = .02$). The investigators report that the magnitude of the effects associated with Negative RCOPE was relatively small, with a 6% to 10% increased risk of mortality. Some of the factors associated with Negative RCOPE proposed by the researchers, which possibly have impact on mortality are: associated emotions such as fear, anxiety, guilt, and anger; emotional or personality differences; possible declines in immunologic functioning or other health indexes; and possible social isolation. The findings regarding the moderating effects of religious coping on current rHCMSS score of patients in this study give support to the studies by Pargament, Koenig and their colleagues.

Health status (represented by current rHCMSS scores) of participants in this study was significantly correlated ($p = .041$, $r = -.328$) with spirituality (represented by EWB). The final model derived from this research demonstrates that spirituality, as represented by EWB and modified by negative religious coping, is associated with a significant amount of the variance (32.9%, $p = .011$) in the health status of PLWHA. Neuman (2002) theorizes that each person is born with a spiritual energy force within the spiritual

variable. The associated energy force lies on a continuum and has the potential for tremendous positive system influence. When the energy force is catalyzed by a life event, the energy begins to magnify; when thought patterns are positively affected by the energy, the body becomes increasingly nourished and sustained through the positive use of that energy. “Spiritual development in varying degrees empower the client system toward well-being by positively directing spiritual energy for use first by the mind and then by the body” (p. 16). The findings of this study support the theory of Neuman in regards to the interrelationships of the spiritual and physiological system variables.

Summary of Key Findings

The 39 participants in this study are representative of the PLWHA in the state of Virginia, although the largest proportion were slightly older (ages 40-49 years, 59%) than the Virginia population (30-39 years, 39%). The majority of the participants had experienced one or more life-threatening AIDS-related health conditions during their course of living with HIV-Disease. A large number of participants had an annual household income of \$10,000 or less and had been treated for a mental health disorder. The participants’ mean SWBS score indicated that they were in the upper normal level of spiritual well-being and had a moderate level of SOC. The group reported a moderately high use of Negative RCOPE. Participants indicated that prayer was the spiritual activity in which they were most frequently engaged with 30 (76.9%) reporting they prayed at least once per day.

The five variables of the NSM provided a well supported holistic framework for investigating how much spirituality contributed to health status in PLWHA. Using age (developmental), income (sociocultural), EWB (spiritual), and Meaningfulness (psychological) as independent variables, the model explained 28.3% ($p = .027$) of participants' health status (current rHCMSS rating). There were significant inverse relationships noted between health status (represented by the current rHCMSS) and EWB (.041, -.328), total SOC-13 (.008, -.420), Meaningfulness (.001, -.515), and Comprehensibility (.018, -.376). Participants who had annual household incomes of \$10,000 or less also had a significantly ($p = .018$) higher mean current rHCMSS rating. There were no significant relationships or associations noted between health status (current rHCMSS) and RWB, RCI-10, or other religious/spiritual practices as defined prior to the study.

Regression analysis revealed that religious coping (Negative RCOPE) had a moderating effect on spirituality (EWB). The model that was chosen as the one, which best explained how much spirituality contributed to health status in PLWHA included: EWB, Negative RCOPE, income, and the interaction between EWB and Negative RCOPE. This model explained 32.9% ($p = .011$) of the variance in health status (current rHCMSS) and EWB remained significant ($p = .022$) in that model. The EWB and the Negative RCOPE were effective instruments in measuring the variables of interest and will be suitable for use in future research that builds upon the findings of this study.

Strengths and Limitations

A major strength of this study was the new and important information that was gleaned about the significance of spirituality and the moderating effect of religious coping, to the health and healing of PLWHA. The study sample was composed of adult, English-speaking PLWHA of either White or Black ethnic background and was predominantly Christian. The sample therefore was not representative of the general United States population. As indicated by VDH (2007) statistics however, it was a representative sample of PLWHA in the state of Virginia. Also, this study included people who were HIV positive as well as those who had been diagnosed with AIDS. It is not known if the difference in diagnosis had an impact on the spiritual parameters investigated. However, efforts were made to control for this by including questions regarding an AIDS diagnosis in the demographic questionnaire; information gleaned from those categories were used in the initial steps of the analysis.

One of the most significant limitations of the study is that it used a convenience sample and the variables measured were collected using a cross-sectional design. Laboratory values for the CD4⁺ counts, CD4⁺ percentages and, viral loads were obtained from the participants' medical records and the amount of time between when the blood samples had been collected and when the questionnaires were completed varied greatly. However, as previously noted, this descriptive-correlational study was an exploratory investigation and was the first in a series of studies designed to investigate the role of spirituality in healing in PLWHA.

Longitudinal-designed studies with randomly selected, ethnically and religiously diverse samples, which build on these findings, could strengthen future research. The SOC scale, EWB subscale of the SWBS, RCI-10, and Negative RCOPE measures contributed important information to this study and would also be useful in future studies. The Positive RCOPE showed no significant correlation with other variables and RWB had a significant correlation only with age; different instruments that address religiosity could contribute more significantly to future studies. The findings indicated that the presence of a mental health diagnosis is an important factor in living with HIV-Disease. Measures of psychopathology, such as the Minnesota Multiphasic Personality Inventory and the Beck Depression Index, could add invaluable insight. No measure of stress was included in this study and such measures could also add significant information.

The only immune measures included in this study were the CD4⁺ counts, CD4⁺ percentage, and the viral load counts. Future studies should include measures shown by McCain et al. (2007) to be important in the relationship between spirituality and immunity; some of those measures were: lymphocyte proliferative function, natural killer cell cytotoxic function, levels of IFN- γ production, and levels of IL-4 production. To more effectively determine the effects of spirituality, stress, and other important factors regarding the impact upon the immune system, such measures should be taken at periodic intervals in longitudinal studies and at the same time that questionnaires are completed.

Accuracy in clinical assessment is required on behalf of the investigator who completes both the rHCMSS and the 1993 Revised CDC Classification System for HIV Infection instruments since they are vulnerable to error and inconsistency in how they are

completed. One of the strengths of this study was that the investigator had received training in administration of the instruments and experience in using them as a research associate in a previous RO1 study and the investigator maintained sole responsibility for the completion of these instruments for all of the participants. The investigator used a constant comparison methodology when classifying the participants to insure that consistency was maintained during the classification process; this was done with both the rHCMSS and the 1993 Revised CDC Classification System instruments.

Implications

Future Research

The findings of this study clearly indicate the importance of spirituality in the health of PLWHA, especially in regards to finding meaning in life while living with the disease and the moderating effects of Negative Religious Coping. However, it is clear that additional research is needed. The results of this study demonstrated significant correlations between EWB, moderated by Negative RCOPE, and indicators of current health status. An important question that can be posed is whether someone living with HIV-Disease experiences better health and mortality as a result of a high level of EWB than someone with poor EWB or, does someone living with HIV-Disease who experiences a higher level of health also have a greater level of EWB? Also, in what ways does negative religious coping moderate EWB? As stressed by Lazarus (2000), longitudinal studies are needed when exploring the area of stress and coping because only

correlations can be demonstrated in cross-sectional research; cross-sectional research cannot prove causality.

There were significant findings regarding interpersonal religious commitment and length of time since HIV-Disease diagnosis. Is interpersonal commitment a factor in long-term survival of HIV; does interpersonal commitment increase as a result of living with the disease? Are spirituality and religion different concepts; if so, do they impact the health status of PLWHA differently and how? These are important questions that also should be explored.

Lazarus (2000) cautions that research, which uses questionnaires, should be only an initial step in the study of a phenomenon and not a final one because they don't allow the researcher "to go below the surface to identify goals and situational intentions" (p. 666). He also emphasizes that prospective studies are needed because such studies allow identification of psychological structures, stable personality dispositions or traits, and identification of changes in psychological reactions over time and diverse conditions, which may have impact on one's ability to cope with stress. Important additional information could be obtained from prospective, longitudinal studies that include both quantitative and qualitative methodologies. In addition, an important component of that research should be determining the source of meaning in the lives of PLWHA; questions that must be explored are: "how does this meaning-seeking being search for meaning, and also, how does he (sic) manage to find it?" (Frankl, 2000, p. 112). What is the source of meaning and is the type of source important--does a religious source of meaning contribute more significantly to health status than a non-religious source? Important HIV

associated immune parameters should be measured as part of the longitudinal studies in order to determine what if any impact changes in coping and spirituality may have on those parameters.

There were also significant findings regarding the importance of SOC to health status in PLWHA; there should be further investigation regarding the direction of those relationships. Some relevant questions are: (a) Does having HIV-Disease contribute to low SOC? (b) Does a low SOC contribute to HIV-Disease, and if so how? (c) Does poverty contribute to a low SOC? (d) Does a preexisting low SOC contribute to the low-income status, if so, in what ways? (e) Does poverty contribute to risky behavior associated with developing HIV-Disease? (f) Does a low SOC contribute to risky behavior associated with developing HIV-Disease? The full version of the SOC scale and other more effective socioeconomic measures could contribute additional information in future studies.

Participants in this study were representative of PLWHA in the central region of the Commonwealth of Virginia. However, future research should also include larger samples of participants that reside in other areas of the United States and are inclusive of other religious and ethnic groups. Such studies could add further insight into the contribution that other religions and ethnic/cultural factors might have to the health status of PLWHA.

Practice and Policy

Hoffert, Henshaw, and Mvududu (2007) state that there is little dispute that healthcare providers need to “perform spiritual assessments and provide individualized spiritual care based on that assessment” (p. 66). The Joint Commission (2008) currently affirms that for hospitalized patients a, “Spiritual assessment should, at a minimum, determine the patient's denomination, beliefs, and what spiritual practices are important to the patient” (Spiritual Assessment section, para. 1). Three questions that are given as examples that healthcare workers may use in making that assessment are: “What gives the patient strength and hope? What does suffering mean to the patient? What does death mean to the patient?” (Spiritual Assessment section, para. 2). The findings of our research reinforce the importance of following the guidelines as put forth by the Joint Commission. However Hoffert et al. present four factors, which they have found continue to be barriers to conducting effective spiritual assessment and provision of spiritual care: (a) uncertainty about the role of nurses in the provision of spiritual care, (b) uncertainty about or lack of comfort with one's own spirituality, (c) confusion about the terms “religion” and “spirituality”, (d) vague and/or ambiguous meanings associated with the term “spirituality”, which results in discomfort in using existing assessment tools. Studies are also needed to determine the comfort and expertise of faculty members in assisting students in their assessment of spiritual needs and in providing spiritual care for patients. Hoffert et al. developed the Client Spiritual Assessment Tool (CSAT) to assist in the effective spiritual assessment. Other tools that have been recently developed are the FICA (Puchalski, 2007-2008) and the HOPE (Anandarajah & Hight, 2001) scales.

Nursing as a profession needs to continue exploring ways in which these barriers can be overcome. To some extent the barriers can be addressed through continued research in the area of spirituality and subsequent nursing education based on the findings of that research. However, research and education alone cannot solve the problems. Carson and Koenig (2004) point out that the healthcare system is experiencing a crisis. While many might describe it as an economic crisis, Carson and Koenig believe the crisis is much broader and deeper than a for-profit model might suggest. They caution that what is being experienced is a “true identity crisis and may ultimately be a spiritual one” (p. 26). The profession of nursing needs to re-examine its own purpose and meaning. Institutions of healthcare provision and nursing education need to find ways to facilitate health professionals to, “recognize, develop, and value their own spirituality” (p. 28). Carson and Koenig propose that by implementing educational interventions in a way that influences top health professionals and administrators to see themselves as spiritual beings and value the importance of spirituality, the entire system can be transformed into one that better meets the needs of patients, “healthcare costs drop, and both patient and provider satisfaction increase” (p. 187).

Conclusion

Meaning has been identified as one of the key elements of spirituality (Chiu, 2000; Coyle, 2002; Ferrell et al., 1998; Flannelly et al., 2002; Fryback, & Reinert, 1999; Halstead & Hull, 2001; Hungelmann et al., 1996; Tuck & Thinganjana, 2007). The findings of this study are most salient because they highlight the importance of meaning

as an aspect of spirituality. Based on the findings of this study, it can be concluded that the existential component of spirituality, modified by negative religious coping, is an essential contributor to the health status of people living with HIV-Disease. Frankl (1959/1984) probably expresses it best,

Those who know how close the connection is between the state of mind of a man—his courage and hope, or lack of them—and the state of immunity of his body will understand that the sudden loss of hope and courage can have a deadly effect. (pp. 96-97).

Frankl goes on to reminds us,

We must never forget that we may also find meaning in life even when confronted with a hopeless situation, when facing a fate that cannot be changed. For what then matters is to bear witness to the uniquely human potential at its best, which is to transform a personal tragedy into a triumph, to turn one's predicament into a human achievement. When we are no longer able to change a situation...we are challenged to change ourselves. In some way, suffering ceases to be suffering at the moment it finds a meaning. (p. 135)

Neuman (2002) assumes that each person is born with a spiritual energy force and that the body has the potential to be nourished through the positive use of this spiritual energy. Neuman postulates that spirituality controls the mind and the mind consciously or unconsciously controls the body; the findings in this study are consistent with Neuman's theoretical premise. Neuman contends that purposeful interventions that support spirituality may catalyze an energy source that is useful in achieving change and

optimal system stability. The knowledge gained from this research study can assist healthcare professionals “to help those living with HIV/AIDS to begin or to rediscover their spiritual journeys and thereby to facilitate their psychological and physical healing” (Coleman & Holzemer, 1999, p. 48).

References

References

- Alegria, M., Vila, D., Train, S., Williams, S., & El-Bassel, N. (2006). Epidemiology. In F. Fernandez & P. Ruiz (Eds.), *Psychiatric aspects of HIV/AIDS* (pp. 3-10). Philadelphia: Lippincott Williams & Wilkins.
- Anandarajah, G. & Hight, E. (2001). Spirituality and medical practice: Using the HOP questions as a practical tool for spiritual assessment. *American Family Physician*, 63(1), 81-89.
- Antonovsky, A. (1979). *Health, stress, and coping*. San Francisco: Jossey-Bass.
- Antonovsky, A. (1987). *Unraveling the mystery of health: How people manage stress and stay well*. San Francisco: Jossey-Bass.
- Antonovsky, A. (1998). The structure and properties of the sense of coherence scale. In H. McCubbin, E. Thompson, A. Thompson, & J. Fromer (Eds.), *Stress, coping, and health in families: Sense of coherence and resiliency* (pp. 21-40), Thousand Oaks, CA: Sage.
- Avants, S. K., Warburton, L. A., & Margolin, A. (2001). Spiritual and religious support in recovery from addiction among HIV-positive injection drug users. *Journal of Psychoactive Drugs*, 33(1), 39-45.

- Barnum, B. S. (2003). *Spirituality in nursing: From traditional to new age* (2nd ed.). New York: Springer.
- Barroso, J., & Powell-Cope, G. M. (2000). Metasynthesis of qualitative research on living with HIV infection. *Qualitative Health Research*, 10(3), 340-353.
- Bayard-Burfield, L., Sundquist, J., & Johansson, S-E (2001). Ethnicity, self reported psychiatric illness, and intake of psychotropic drugs in five ethnic groups in Sweden. *Journal of Epidemiology and Community Health*, 55, 657-664.
- Bourjolly, J. N. (1998). Differences in religiousness among black and white women with breast cancer. *Social Work in Health Care*, 28(1), 21-39.
- Bourjolly, J. N., & Hirschman, K. B. (2001). Similarities in coping strategies but differences in sources of support among African American and White women coping with breast cancer. *Journal of Psychosocial Oncology*, 19(2), 17-38.
- Bower, J. W., Kemeny, M. E., Taylor, S. E., & Fahey, J. L. (1998). Cognitive processing, discovery of meaning, CD4 decline, and AIDS-related mortality among bereaved HIV-seropositive men. *Journal of Consulting and Clinical Psychology*, 66(6), 979-986.
- Bridge, M. J. (1986). A phenomenological study of being a homosexual male who has been diagnosed with AIDS (Doctoral dissertation, California School of Professional Psychology, 1986). *Dissertation Abstracts International*, 48, 3674.
- Buseh, A. G., Stevens, P. E., McManus, J., Addison, J., Morgan, S., & Millon-Underwood, S. (2006). Challenges and opportunities for HIV prevention and care:

- Insights from focus groups of IV-infected African American men. *Journal of the Association of Nurses in AIDS Care*, 17(4), 3-15.
- Byrnes, D. M., Antoni, M. H., Goodkin, K., Efanties-Potter, J., Asthana, D., Simon, T., et al. (1998). Stressful events, pessimism, natural killer cell cytotoxicity, and cytotoxic/suppressor T cells in HIV+ Black women at risk for cervical cancer. *Psychosomatic Medicine*, 60, 714-722.
- Calabria, M. D., & Macrae, J. A. (Eds.). (1994). *Suggestions for thought by Florence Nightingale: Selections and commentaries*. Philadelphia: University of Pennsylvania Press.
- Carson, V. B. (1993). Prayer, meditation, exercise and special diets: Behaviors of the hardy person with HIV/AIDS. *Journal of the Association of Nurses in AIDS Care*, 4(3), 18-28.
- Carson, V. B., & Green, H. (1992). Spiritual well-being: A predictor of hardiness in patients with acquired immunodeficiency syndrome. *Journal of Professional Nursing*, 8(4), 209-220.
- Carson, V. B. & Koenig, H. G. (2004). *Spiritual caregiving: Healthcare as a ministry*. Philadelphia & London: Templeton Foundation Press.
- Carson, V., Soeken, K. L., Shanty, J., & Terry, L. (1990). Hope and spiritual well-being: Essentials for living with AIDS. *Perspectives in Psychiatric Care*, 26(2), 28-34.
- Cederfjäll, C., Langius-Eklöf, A., Lidman, K., & Wredling, R. (2001). Gender differences in perceived health-related quality of life among patients with HIV infection. *AIDS Patient Care and STDs*, 15(1), 31-39.

Cederfjäll, C., Langius-Eklöf, A., Lidman, K., & Wredling, R. (2002). Self-reported adherence to antiretroviral treatment and degree of sense of coherence in a group of HIV-infected patients. *AIDS Patient Care and STDs*, 16(12), 609-616.

Centers for Disease Control & Prevention (1992). 1993 revised classification system for HIV infection and expanded surveillance case definition for AIDS among adolescents and adults. *Morbidity and Mortality Weekly Report*, 4(RR-17).

Retrieved November 15, 2006, from

<http://www.cdc.gov/MMWR/preview/MMWRhtml/0018871.htm>

Centers for Disease Control & Prevention (2005). HIV/AIDS surveillance report, 2004, (16) pp. 1-46. Retrieved December 26, 2005 from,

<http://www.cdc.gov/hiv/stats/hasrlink.htm>

Chibnall, J. T., Videen, S. D., Duckro, P. N., & Miller, D. K. (2002). Psychosocial-spiritual correlates of death distress in patients with life-threatening medical conditions. *Palliative Medicine*, 16, 331-338.

Chiu, L. (2000). Lived experience of spirituality in Taiwanese women with breast cancer. *Western Journal of Nursing Research*, 22(1), 29-53.

Chiu, L. (2001). Spiritual resources of Chinese immigrants with breast cancer in the USA. *International Journal of Nursing Studies*, 38, 175-184.

Cobb, R. K. (2002). The concept of spirituality. Unpublished manuscript.

Cohen, R., Boston, P., Mount, B., & Porterfield, P. (2001). Changes in quality of life following admission to palliative care units. *Palliative Medicine*, 15, 363-371.

Coleman, C. L. (2003a). Spirituality and sexual orientation: Relationship to mental well-

- being and functional health status. *Journal of Advanced Nursing*, 43(5), 457-464.
- Coleman, C. L. (2003b). Transmission of HIV infection among older adults: A population at risk. *Journal of the Association of Nurses in AIDS Care*, 14(1), 82-85.
- Coleman, C. L. (2004). The contribution of religious and existential well-being to depression among African American heterosexuals with HIV infection. *Issues in Mental Health Nursing*, 25, 103-110.
- Coleman, C. L., & Holzemer, W. (1999). Spirituality, psychological well-being, and HIV symptoms for African Americans living with HIV disease. *Journal of the Association of Nurses in AIDS care*, 10(1), 42-50.
- Collaborative Group on AIDS Incubation and HIV Survival (2000). Time from HIV-1 seroconversion to AIDS and death before widespread use of highly-active antiretroviral therapy: A collaborative re-analysis. *Lancet*, 355, 1131-1137.
- Conco, D. (1995). Christian patients' views of spiritual care. *Western Journal of Nursing Research*, 17(3), 266-276.
- Conner, N. E., & Eller, L. S. (2004). Spiritual perspectives, needs and nursing interventions of Christian African-Americans. *Journal of Advanced Nursing*, 46(6), 624-632.
- Cotton, S., Pulchalski, C. M., Sherman, S. N., Mrus, J. M., Peterman, A. H., Feinberg, J. et al. (2006). Spirituality and religion in patients with HIV/AIDS. *Journal of General Internal Medicine*, 21, S5-13.
- Coward, D. D. (1991). Self-transcendence and emotional well-being in women with

- advanced breast cancer. *Oncology Nursing Forum*, 18(5), 857-863.
- Coward, D. D., & Reed, P. G. (1996). Self-transcendence: A resource for healing at the end of life. *Issues in Mental Health Nursing*, 17, 275-288.
- Coyle, J. (2002). Spirituality and health: Towards a framework for exploring the relationship between spirituality and health. *Journal of Advanced Nursing*, 37(6), 589-597.
- Daaleman, T. P., Cobb, A. K., & Frey, B. B. (2001). Spirituality and well-being: An exploratory study of the patient perspective. *Social Science and Medicine*, 53, 1503-1511.
- Dane, B. (2000). Thai women: Meditation as a way to cope with AIDS. *Journal of Religion and Health*, 39(1), 5-21.
- DeLongis, A., Folkman, S., Lazarus, R. S. (1988). The impact of daily stress on health and mood: Psychological and social resources as mediators. *Journal of Personality and Social Psychology*, 54(3), 486-495.
- Depalo, R. L. (1997). Spirituality, dealing with illness, hopelessness, and multidimensional fear of death as perceived by gay men with acquired immune deficiency syndrome (Doctoral Dissertation, New York University, 1997). *Dissertation Abstracts International*, 58, 2392.
- Dion, K. L. (2005). Marital status as stimulus variable and subject variable. *Psychological Inquiry: An International Journal for the Advancement of Psychological Theory*, 16(2), pp. 104-110.

- Dunbar, C., Mueller, W., Medina, C., & Wolf, T. (1998). Psychological and spiritual growth in women living with HIV. *Social Work, 43*(2), pp. 144-154.
- Dunn, K. S. & Horgas, A. L. (2000). The prevalence of prayer as a spiritual self-care modality in elders. *Journal of Holistic Nursing, 18*(4), 337-351.
- Eriksson, M., & Lindström, B. (2006). Antonovsky's sense of coherence scale and the relation with health: A systematic review. *Journal of Epidemiology and Community Health, 60*, 376-381.
- Fawcett, J. (2000). *Analysis and evaluation of contemporary nursing knowledge: Nursing models and theories*. Philadelphia: F. A. Davis.
- Fehring, R., Miller, J., & Shaw, C. (1997). Spiritual well-being, religiosity, hope, depression, and other mood states in elderly people coping with cancer. *Oncology Nursing Forum, 24*(4), 663-671.
- Ferrell, B. R., Grant, M., Gunk, B., Otis-Green, S., & Garcia, N. (1998). Quality of life in breast cancer: Part II: Psychological and spiritual well-being. *Cancer Nursing, 21*(1), 1-9.
- Fins, J. J., Guest, R., S., & Acres, C. A. (2000). Gaining insight into the care of hospitalized dying patients: An interpretative narrative analysis. *Journal of Pain and Symptom Management, 20*(6), 399-407.
- Flannelly, L. T., Flannelly, K. J., & Weaver, A. J. (2002). Religious and spiritual variables in three major oncology nursing journals: 1990-1999. *Oncology Nursing Forum, 29*(4), 679-685.

- Fok, S. K., Chair, S. Y., & Lopez, V. (2005). Sense of coherence, coping and quality of life following a critical illness. *Journal of Advanced Nursing*, 49(2), 173-181.
- Folkman, S. & Moskowitz, T. (2000). Positive affect and the other side of coping. *The American Psychologist*, 55(6), 647-654.
- Frankl, V. E. (1975). *The unconscious God*. New York: Simon & Schuster.
- Frankl, V. E. (1969/1988). *The will to meaning: Foundations and applications of logotherapy: Expanded edition*. New York: A Meridian Book.
- Frankl, V. E. (2000). *Man's search for ultimate meaning*. Cambridge, MA: Perseus.
- Frankl, V. E. (1959/1984). *Man's search for meaning*. NY :Pocket Books.
- Fryback, P. B. (1991). Perceptions of health by persons with a terminal disease: Implications for nursing (Doctoral Dissertation, University of Texas at Austin, 1991). *Dissertation Abstracts International*, 52, 250p, (UMI PUZ9128225).
- Fryback, P. B., & Reinert, B. R. (1999). Spirituality and people with potentially fatal diagnoses. *Nursing Forum*, 34(1), 13-22.
- Fryback, P. B., Reinert, B. R., & Bonita, R. (1997). Alternative therapies and control for health in cancer and AIDS. *Clinical Nurse Specialist*, 11(2), 64-69.
- Gauthier, D. M. (2002). The meaning of healing near the end of life. *Journal of Hospice and Palliative Nursing*, 4(4), 220-227.
- General Social Survey (2006). *Religious Preference*. Retrieved on February 18, 2008, from <http://sda.berkeley.edu/cgi-bin32/hsda?harcsta+gss06>

- Gibbie, T., Mijch, A., Ellen, S., Hoy, J., Hutchison, C., Wright, E., Chua, P., & Judd, F. (2006). Depression and neurocognitive performance in individuals with HIV/AIDS: 2-year follow-up. *HIV Medicine, 7*, 112-121.
- Gibson, L. M. R., & Parker, V. (2003). Inner resources as predictors of psychological well-being in middle-income African American breast cancer survivors. *Cancer Control, 10*(5), 52-59.
- Gilbar, O. (2003). Do attitude toward cancer, sense of coherence and family high risk predict more psychological distress in women referred for a breast cancer examination? *Women & Health, 38*(2), 35-46.
- Glaister, J. A. (2001). Healing: Analysis of the concept. *International Journal of Nursing Practice, 7*, 63-68.
- Gray, J., & Cason, C. L. (2002). Mastery over stress among women with HIV/AIDS. *Journal of the Association of Nurses in AIDS Care, 13*(4), 43-57.
- Gucwa, D. L. (2002). Healing patients on a spiritual, as well as physical, level. *AORN Journal, 76*(6), 1054-1055.
- Guillory, J., Sowell, R., Moneyham, L., & Seals, B. (1997). An exploration of the meaning and use of spirituality among women with HIV/AIDS. *Alternative Therapies, 3*(5), 55-60.
- Haggart, M. (1996). Nursing the soul. *Complementary Therapies in Nursing Midwifery, 2*(1), 17-20.
- Hall, B. A. (1998). Patterns of spirituality in persons with advanced HIV disease. *Research in Nursing & Health, 21*, 143-153.

- Halstead, M. T., & Hull, M. (2001). Struggling with paradoxes: The process of spiritual development in women with cancer. *Oncology Nursing Forum*, 28(10), 1534-1544.
- Halstead, M. T., & Mickley, J. R. (1997). Attempting to fathom the unfathomable: Descriptive views of spirituality. *Seminars in Oncology Nursing*, 13(4), 225-230.
- Hart, K. E., Wilson, T., L., & Hittner, J. B. (2006). A psychosocial resilience model to account for medical well-being in relation to sense of coherence. *Journal of Health Psychology*, 11(6), 857-862.
- Harrison, R. L. (1997). Spirituality and hope: Nursing implications for people with HIV disease. *Holistic Nursing Practice*, 12(1), 9-16.
- Hermann, C. (2000). A guide to the spiritual needs of elderly cancer patients. *Geriatric Nursing*, 21(6), 324-325.
- Highfield, M. E. (1999). Providing spiritual care to patients with cancer. *Clinical Journal of Oncology Nursing*, 4(3), 115-120.
- Hills, J., Paice, J. A., Cameron, J. R., & Shott, S. (2005). Spirituality and distress in palliative care consultation. *Journal of Palliative Medicine*, 8, 782-788.
- Hoffert, D., Henshaw, C., & Mvududu, N. (2007). Enhancing the ability of nursing students to perform a spiritual assessment. *Nurse Educator*, 32(2), 66-72.
- Hungelmann, J., Kenkel-Rossi, E., Klassen, L., & Stollenwerk, R. (1996). Focus on spiritual well-being: Harmonious interconnectedness of mind-body-spirit-use of the JAREL Spiritual Well-Being Scale: Assessment of spiritual well-being is essential to the health of individuals. *Geriatric Nursing*, 17(6), 262-266.

- Ironson, G., & Schneiderman, N. (2002). Psychosocial factors, spirituality/religiousness, and immune function in HIV/AIDS patients. In H. G. Koenig & H. J. Cohen (Eds.), *The link between religion and health: Psychoneuroimmunology and the faith factor* (pp. 139-159). New York: Oxford University Press.
- Jemmott, L. S., Jemmott, J. B., & Villarruel, A. M. (2002). Predicting intentions and condom use among Latino college students. *Journal of the Association of Nurses in AIDS Care*, 13(2), 59-69.
- Joint Commission (2008). *Spiritual assessment*. Retrieved February 25, 2008, from http://www.jointcommission.org/AccreditationPrograms/HomeCare/Standards/FAQs/Provision+of+Care/Assessment/Spiritual_Assessment.htm
- Joint United Nations Programme on HIV/AIDS (2001). *HIV/AIDS and communication for behavior and social change: Programme experiences, examples, and the way forward*.
- Joint United Nations Programme on HIV/AIDS (2004a). *AIDS epidemic update, December, 2004*. NLM classification: WC 503,41. Retrieved on February 11, 2005, from http://www.unaids.org/wad2004/report_pdf.html
- Joint United Nations Programme on HIV/AIDS (2004b). *UNAIDS questions and answers, November, 2004*. Retrieved on February 11, 2004, from <Http://www.unaids.org/NetTools/Misc>
- Joint United Nations Programme on HIV/AIDS (2007). *2007 AIDS epidemic update*.
- Joint United Nations Programme on HIV/AIDS & Pennsylvania State University (1999). *Communications framework for HIV/AIDS*.

- Kattainen, E., Meriläinen, P., & Sintonen, H. (2006). Sense of coherence and health-related quality of life among patients undergoing coronary artery bypass grafting or angioplasty. *European Journal of Cardiovascular Nursing*, 5, 21-30.
- Kiecolt-Glaser, J. K., McGuire, L., Robles, T. F., & Glaser, R. (2002). Emotions, morbidity, and mortality: New perspectives from psychoneuroimmunology. *Annual Review of Psychology*, 53, 83-107.
- Kilpatrick, S. D., Weaver, A. J., McCullough, M. E., Puchalski, C., Larson, D. B., Hays, J. C., et al. (2005). A review of spiritual and religious measures in nursing research journals: 1995-1999. *Journal of Religion and Health*, 44(1), 55-66.
- Knight, V. A. (1998). The art of self care: Self-nurturance and the African-American woman with HIV/AIDS (Doctoral Dissertation, The Union Institute, 1998). *Dissertation Abstracts International*, 59, 3698.
- Koenig, H. G. (2001). Religion and medicine IV: Religion, physical health, and clinical implications. *International Journal of Psychiatry in Medicine*, 31(3), 321-336.
- Koropecj-Cox, T. (2005). Singles, society, and science: Sociological perspective. *Psychological Inquiry: An International Journal for the Advancement of Psychological Theory*, 16(2), pp. 91-97.
- Kritek, P. B. (2000). "Patchin' up the old wineskins": The challenge of crafting a science of healing practices in nursing. *Nursing Science Quarterly*, 13(4), 314-322.
- Landis, B. J. (1997). Healing and the human spirit. In P.B. Kritek (Ed.), *Reflections on healing: A central nursing construct* (pp. 72-80). New York: NLN Press.

- Langeland, E., Riise, T., Berit R., Hanestad, B. R., Nortvedt, M. W., Kristoffersen, K., & Wahl, A. K. (2006). The effect of salutogenic treatment principles on coping with mental health problems: A randomized controlled trial. *Patient Education and Counseling*, 62, 212–219.
- Lazarus, R. S. (2000). Toward better research on stress and coping. *The American Psychologist*, 55(6), 665-673.
- Lutgendorf, S. K., Vitaliano, P. P., Tripp-Reimer, T., Harvey, J. H., & Lubaroff, D. M. (1999). Sense of coherence moderates the relationship between life stress and natural killer cell activity in healthy older adults. *Psychology and Aging*, 14(4), 552-563.
- Martin, M. A., Rissmiller, P., & Beal, J. A. (1995). Health-illness beliefs and practices of Haitians with HIV disease living in Boston. *Journal of the Association of Nurses in AIDS Care*, 6(6), 45-53.
- Martsof, D. S., & Mickley, J. R. (1998). The concept of spirituality in nursing theories: Differing world-views and extent of focus. *Journal of Advanced Nursing*, 27(2), 294-303.
- McCain, N. L., Gray, D. P., Elswick, R., K., Robins, J. L., Tuck, I., Walter, J. M., et al. (2007). A randomized clinical trial of alternative stress management interventions in persons with HIV disease. Manuscript submitted for publication.
- McCain, N. L., Gray, D. P., Walter, J. M., & Robins, J. (2005). Implementing a comprehensive approach to the study of health dynamics using the psychoneuroimmunology paradigm. *Advances in nursing Science*, 28(4), 320-332.

- McCain, N. L., Lyon, D. E., Higginson, R., Settle, J., Wheeler-Robins, J. L., & Fisher, E. J. (1998). Revision of the HIV center medical staging scale. *Journal of the Association of Nurses in AIDS Care*, 9(5), 19-23.
- Meadows, L. N., & Morse, J. M. (2001). Constructing evidence within the qualitative project. In J. M. Morse, J. M. Swanson, & A. J. Kuzel (Eds.), *The nature of qualitative evidence* (pp. 187-200). Thousand Oaks, CA: Sage.
- Meisenhelder, J. B. (2003). Gender differences in religiosity and functional health in the elderly. *Geriatric Nursing*, 24(6), 343-347, 352.
- Mickley, J. R., Soeken, K., & Belcher, A. (1992). Spiritual well-being, religiousness and hope among women with breast cancer. *Image: Journal of Nursing Scholarship*, 24(4) 267-272.
- Moberg, D. O. (2005). Research in spirituality, religion, and aging.. In H. R. Moody (Ed.), *Religion, spirituality, and aging: A social work perspective* (pp. 11-40). Binghamton, NY: Haworth Press.
- Moch, S. D. (1998). Health-within-illness: Concept development through research and practice. *Journal of Advanced Nursing*, 28(2), 305-310.
- Nakamura, H., Matsuzaki, I., Sasahara, S., Hatta, K., Nagase, H., Oshita, Y., et al. (2003). Enhancement of a sense of coherence and natural killer cell activity which occurred in subjects who improved their exercise habits through health education in the workplace. *Journal of Occupational Health*, 45, 278-285.
- Narayanasamy, A. (1995) Spiritual care of chronically ill patients. *Journal of Clinical Nursing*, 4, 397-400.

- National Institute of Allergy & Infectious Disease (2004). *Treatment of HIV infection, NIAID fact sheet*, November 2004. Retrieved December 27, 2005 from, <http://www.niaid.nih.gov/factsheets/treat-hiv.htm>
- Nelson, C. J., Rosenfeld, B., Breitbart, W., & Galietta, M. (2002). Spirituality, religion, and depression in the terminally ill. *Psychosomatics*, 43(3), 213-220.
- Neuman, B. (2002). The Neuman systems model. In B. Neuman & J. Fawcett's (Eds.), *The Neuman systems model* (4th ed.) (pp.3-33). Upper Saddle River, NJ: Prentice Hall.
- Neuman, B., & Fawcett, J. (2002). *The Neuman systems model* (4th ed.). Upper Saddle River, NJ: Prentice Hall.
- Newman, M. A. (1986). *Health as expanding consciousness*. St. Louis; Mosby.
- Newman, M. A. (1994). *Health as expanding consciousness* (2nd ed.). New York; NLN Press.
- Newshan, G. (1998). Transcending the physical: Spiritual aspects of pain in patients with HIV and/or cancer. *Journal of Advanced Nursing*, 28(6), 1236-1241.
- Nightingale F. (1969). *Notes on nursing: What it is and what it is not*. New York: Dover (Original work published 1860).
- Pallant, J. F. & Lae, L. (2002). Sense of coherence, well-being, coping and personality factors: Further evaluation of the sense of coherence scale. *Personality and Individual Differences*, 33, 39-48.

- Paloutzian, R. F., & Ellison, C. W. (1982). Loneliness, spiritual well-being and quality of life. In L. A. Peplan & D. Perlman (Eds.), *Loneliness: A sourcebook of current theory, research and therapy* (pp. 224-237). NY: John Wiley & Sons.
- Pargament, K. I. (1999). Religious/Spiritual coping. In Fetzer Institute, *Multidimensional measurement of religiousness/spirituality for use in health research: A report of the Fetzer Institute/National Institute on Aging working group* (pp. 19-24). Kalamazoo, MI: Fetzer Institute.
- Pargament, K. I. (2005). Brief RCOPE. Unpublished manuscript, Bowling Green State University.
- Pargament, K. I., Koenig, H. G., & Perez, L.M. (2000). The many methods of religious coping: Development and initial validation of the RCOPE. *Journal of Clinical Psychology*, 56(4), 519-543.
- Pargament, K. I., McCarthy, S., Shah, P., Ano, G., Tarakeshwar, N., Wachholtz, A., et al. (2004). Religion and HIV: A review of the literature and clinical implications. *Southern Medical Journal*, 12, 1201-1209.
- Pargament, K. I., Koenig, H. G., Tarakeshwar, N., & Hahn, J. (2001) Religious struggles as a predictor of mortality among medically ill elderly patients. *Archives of Internal Medicine*, 161, 1881-1885.
- Pargament, K. I., Koenig, H. G., Tarakeshwar, N., & Hahn, J. (2004). Religious Coping methods as predictors of psychological, physical and spiritual outcomes among medically ill elderly patients: A two-year longitudinal study. *Journal of Health Psychology*, 9(6), 713-730.

- Pargament, K. I., Smith, B. W., Koenig, H. G., & Perez L. (1998). Patterns of positive and negative religious coping with major life stressors. *Journal for the Scientific Study of Religion*, 37(4), 711-725.
- Parse, R. R. (1998). *The human becoming school of thought: A perspective for nurses and other health professionals*. Thousand Oaks, CA; Sage.
- Parse, R. R., Coyne, A. B., & Smith M. J. (1985). *Nursing research: Qualitative methods*. Bowie, MD; Brady Communications.
- Pawluch, D., Cain, R., & Gillett, J. (2000). Lay constructions of HIV and complementary therapy use. *Social Science & Medicine*, 51, 251-264.
- Polit, D. F. (1996). *Data analysis & statistics: For nursing research*. Stamford, CT; Appleton & Lang.
- Post-White, J., Ceronsky, C., Kreitzer, M., Nickelson, K., Drew, D., Mackey, K., et al. (1996). Hope, spirituality, sense of coherence, and quality of life in patients with cancer. *Oncology Nursing Forum*, 23(10), 1571-1579.
- Potter, M. L & Zauszniewski, J. A. (2000). Spirituality, resourcefulness, and arthritis impact on health perception of elders with rheumatoid arthritis. *Journal of Holistic Nursing*, 18(4), 311-221.
- Puchalski, C. M. (2007-2008). Spirituality and the care of patients at the end-of-life: An essential component of care. *Omega*, 56(1), 33-46.
- Pullen, L., Tuck, I., & Mix, K. (1996). Mental health nurses' spiritual perspectives. *Journal of Holistic Nursing*, 14(2), 85-97.
- Quinn, J. F. (1997). Healing: A model for an integrative health care system. *Advanced*

- Practice Nursing*, 3(10), 1-7.
- Quinn, J. F. (2000). The self as healer: Reflections from a nurse's journey. *American Association of Critical Care Nurse Clinical Issues*, 11(1), 17-26.
- Rabin, B. S. & Koenig, H. G. (2002). Immune, neuroendocrine, and religious measures. In H. G. Koenig & H. J. Cohen (Eds.), *The link between religion and health: Psychoneuroimmunology and the faith factor* (pp. 197-249). NY: Oxford University Press.
- Raleigh, E. D. (1992). Sources of hope in chronic illness. *Oncology Nursing Forum*, 19(3), 443-448.
- Raleigh, E. D., Robinson, J. H., Marold, K., & Jamison, M. T. (2006). Family caregiver perception of hospice support. *Journal of Hospice and Palliative Nursing*, 8(1), 25-33.
- Read, S., Aunola, K., Feldt, T., Leinonen, R., & Ruoppila, I. (2005). The relationship between generalized resistance resources, sense of coherence, and health among Finnish people aged 65-69. *European Psychologist*, 10(3), 244-253.
- Reed, P. G. (1991). Preferences for spiritually related nursing interventions among terminally ill and nonterminally ill hospitalized adults and well adults. *Applied Nursing Research*, 4(3), 122-128.
- Reed, P. G. (1992). An emerging paradigm for the investigation of spirituality in nursing. *Research in Nursing and Health*, 15, 349-357.

- Richardson, C. G. & Ratner, P. A. (2005). Sense of coherence as a moderator of the effects of stressful life events on health. *Journal of Epidemiology and Community Health, 59*, 979-984.
- Rook, K. S., Zettel, L. A. (2005). The purported benefits of marriage viewed through the lens of physical health. *Psychological Inquiry: An International Journal for the Advancement of Psychological Theory, 16*(2), pp. 116-121.
- Ross, L. (1995). The spiritual dimension: Its importance to patients' health, well-being and quality of life and its implications for nursing practice. *International Journal of Nursing Studies, 32*(5), 457-468.
- Sackoff, J. E., Hanna, D. B., Pfeiffer, M. R., & Torlan, L. V. (2006). Causes of death among persons with AIDS in the antiretroviral therapy: New York city. *Annals of Internal Medicine, 145*(6), 397-W-122.
- Sandén-Eriksson, B. (2000). Coping with type-2 diabetes: The role of sense of coherence compared with active management. *Journal of Advanced Nursing, 31*(6), 1393-1397.
- Sherman, D., W., Ye, X., Y., McSherry, C., Calabrese, M., Parkas, V., & Gatto, M. (2005). Spiritual well-being as a dimension of quality of life for patients with advanced cancer and AIDS and their family caregivers: Results of a longitudinal study. *American Journal of Hospice and Palliative Medicine, 22*(5), 349-362.
- Sicher, F., Targ, I., Moore, D., & Smith, H. (1998). A randomized double-blind study of the effect of distant healing in a population with advanced AIDS—report of a small scale study. *The Western Journal of Medicine, 169*(6), 356-363.

- Siegel, K., & Schrimshaw, E. W. (2000). Perceiving benefits in adversity: Stress-related growth in women living with HIV/AIDS. *Social Science & Medicine*, 51, 1543-1554.
- Sowell, R., Moneyham, L., Hennessy, M., Guillory, J., Demi, A., & Seals, B. (2000). Spiritual activities as a resistance resource for women with human immunodeficiency virus. *Nursing Research*, 49(2), 73-82.
- Sowell, R. L., Moneyham, L., Guillory, J., Seals, B., Cohen, L., & Demi, A. (1997). Self-care activities of women infected with human immunodeficiency virus. *Holistic Nursing Practice*, 11(2), 18-26.
- Stranahan, S. (2001). Spiritual perception, attitudes about spiritual care, and spiritual care practices among nurse practitioners. *Western Journal of Nursing Research*, 23(1), 90-104.
- Stoll, R. (1979). Guidelines for spiritual assessment. *American Journal of Nursing*, 9, 1574-1577.
- Suominen, S., Helenius, H., Blomberg, H., Uutela, A., & Koskenvuo, M. (2001). Sense of coherence as a predictor of subjective state of health: Results of 4 years of follow-up of adults. *Journal of Psychosomatic Research*, 50, 77-86.
- Tarakeshwar, N., Hansen, N., Kochman, A., & Sikkema, K. J. (2005). Gender, ethnicity and spiritual coping among bereaved HIV-positive Individuals. *Mental Health, Religion & Culture*, 8(2), 109-125.

- Targ, E. F., & Levine, E. G. (2002). The efficacy of a mind-body-spirit group for women with breast cancer: A randomized controlled trial. *General Hospital Psychiatry*, 24, 238-248.
- Taylor, E. J. (2003). Spiritual needs of patients with cancer and family caregivers. *Cancer Nursing*, 26(4), 260-266.
- Tewes, U. (1996). Concepts in psychology. In M. Schedlowski & U. Tewes (Eds.), *Psychoneuroimmunology: An interdisciplinary introduction* (pp. 93-111). New York: Kluwer.
- Tiegs, T. J., Heesacker, M., Ketterson, T. U., Pekich, D. G., Rittman, M. R., Rosenbek, J. C., Stidham, B. S., & Gonzalez-Rothi, L. J. (2006). Coping by stroke caregivers: Sex similarities and differences. *Topics in Stroke Rehabilitation*, 13(1), 52-62.
- Tongprateep, T. (2000). The essential elements of spirituality among rural Thai elders. *Journal of Advanced Nursing*, 31(1), 197-203.
- Treisman, B. J. & Angelino, A. F. (2004). *The psychiatry of AIDS: A guide to diagnosis and treatment*. Baltimore: John Hopkins University Press.
- Tuck, I. (1998). *Spiritual growth groups: Intervention operations manual*. Richmond, VA: Author.
- Tuck, I. (2004). Development of a spirituality intervention to promote healing. *The Journal of Theory Construction and Testing*, 8(2), 67-71.
- Tuck, I., Alleyne, R. & Thinganjana, W. (2006). Spirituality and stress management in healthy adults. *Journal of Holistic Nursing*, 24(4), 245-253.

- Tuck, I., & Baliko, B. (2001). Why deliver health care with spirituality. *Excellence in Clinical Practice*, 2(3), 1-4.
- Tuck, I., & Cobb, R. K. (2002, April). *The concept of spirituality: A content analysis of responses from participants in a series of spiritual growth groups*. Poster session presented at the Third Annual Interdisciplinary Conference: Spirituality: Education, Research and Practice, Richmond, VA..
- Tuck, I., McCain, N., & Elswick, R. (2001). Spirituality and psychosocial factors in persons living with HIV. *Journal of Advanced Nursing*, 33(6), 776-783.
- Tuck, I., Pullen, L., & Lynn, C. (1997). Spiritual interventions provided by mental health nurses. *Western Journal of Nursing Research*, 19(3), 351-363.
- Tuck, I., Pullen, L., & Wallace, D. (2001). A comparative study of the spiritual perspectives and interventions of mental health and parish nurses. *Issues in Mental Health Nursing*, 22, 593-605.
- Tuck, I., & Thinganjana, W. (2007). An exploration of the meaning of spirituality voiced by persons living with HIV disease and healthy adults. *Issues in Mental Health Nursing*, 28, 151-166.
- US Census Bureau (2008). *Poverty Thresholds 2007*. . Retrieved on April 1, 2008 from <http://www.census.gov/hhes/www/poverty/threshld/thresh07.html>
- Van Gorp, W. G., Rabkin, J. G., Ferrando, S. J., Mintz, J., Ryan, E., Borkowski, T., & McElhiney, M. (2007). Neuropsychiatric predictors of return to work in HIV/AIDS. *Journal of the International Neuropsychological Society*, 13, 80-89.

- Virginia Department of Health (2007). *Epidemiology profile 2007: HIV & AIDS in Virginia*.
- Virginia Department of Health (2008). Table 4: *HIV/AIDS by District and Region and Quarter of Report*. Retrieved on January 31, 2008 from <http://www.vdh.virginia.gov/epidemiology/DiseasePrevention/DAta/surveillance/surveillancereport074thqtr.htm> .
- Virginia Department of Health, Division of Virginia HIV/AIDS (2000). *Epidemiologic profile: Data through 2000*.
- Virginia Department of Health, Division of HIV, STD, and Pharmacy Services (2004). *Epidemiology profile: HIV and AIDS in Virginia. Data through 2003*.
- Watson, J. (1999). *Postmodern nursing and beyond*. Edinburgh, England: Churchill Livingstone.
- Weissbecker, I., Salmon, P., Studts, J. L., Floyd, A. R., Dedert, E. A., & Sephton, S. E. (2002). Mindfulness-based stress reduction and sense of coherence among women with fibromyalgia. *Journal of Clinical Psychology in Medical Settings*, 9(4), 297-307.
- Wendler, M. C. (1996). Understanding healing: A conceptual analysis. *Journal of Advanced Nursing*, 24, 836-842.
- Weaver, A. J., Flannelly, L.T., Flannelly, K. J., Koenig, H. G., & Larson, D. B. (1998). An analysis of research on religious and spiritual variables in three major mental health nursing journals, 1991-1995. *Issues in Mental Health Nursing*, 19, 263-276.

- Woods, T. E., Antoni, M. H., Ironson, G. H., & Kling, D. W. (1999). Religiosity is associated with affective and immune status in symptomatic HIV-infected gay men. *Journal of Psychosomatic Research*, 46(2), 165-176.
- World Health Organization (2004). *Psychosocial support*. Retrieved on January 2, 2005, from <http://www.who.int/hiv/topics/psychosocial/support/en/print.html>
- Worthington, E. L., Wade, N. G., Hight, T. L., Ripely, J. S., McCullough, M. E., Berry, J. W., et al. (2003). The religious commitment inventory—10: Development, refinement, and validation of a brief scale for research and counseling. *Journal of Counseling Psychology*, 50(1), 84-96.
- Zingmond, D.S., Wenger, N. S., Crystal, S., Joyce, G. F., Liu, H., Sambamoorthi, U. et al. (2001). Circumstances at HIV diagnosis and progression of disease in older HIV-infected Americans. *American Journal of Public Health*, 91(7). 117-1120

APPENDIX A

Spiritual Well-Being Scale

Directions: For each of the following statements, circle the choice that best indicates the extent of your agreement or disagreement as it describes your personal experience.

1. I don't find much satisfaction in private prayer with God.

Strongly	Moderately	Agree	Disagree	Moderately	Strongly
Agree	Agree			Disagree	Disagree
2. I don't know who I am, where I came from, or where I'm going

Strongly	Moderately	Agree	Disagree	Moderately	Strongly
Agree	Agree			Disagree	Disagree
3. I believe that God loves me & cares about me.

Strongly	Moderately	Agree	Disagree	Moderately	Strongly
Agree	Agree			Disagree	Disagree
4. I feel that life is a positive experience.

Strongly	Moderately	Agree	Disagree	Moderately	Strongly
Agree	Agree			Disagree	Disagree
5. I believe that God is impersonal & not interested in my daily situations.

Strongly	Moderately	Agree	Disagree	Moderately	Strongly
Agree	Agree			Disagree	Disagree
6. I feel unsettled about my future.

Strongly	Moderately	Agree	Disagree	Moderately	Strongly
Agree	Agree			Disagree	Disagree
7. I have a personally meaningful relationship with God.

Strongly	Moderately	Agree	Disagree	Moderately	Strongly
Agree	Agree			Disagree	Disagree
8. I feel very fulfilled & satisfied with life.

Strongly	Moderately	Agree	Disagree	Moderately	Strongly
Agree	Agree			Disagree	Disagree
9. I don't get much personal strength & support from my God.

Strongly	Moderately	Agree	Disagree	Moderately	Strongly
Agree	Agree			Disagree	Disagree

10. I feel a sense of well-being about the direction my life is headed in..
 Strongly Agree Moderately Agree Agree Disagree Moderately Disagree Strongly Disagree
11. I believe that God is concerned about my problems.
 Strongly Agree Moderately Agree Agree Disagree Moderately Disagree Strongly Disagree
12. I don't find much satisfaction in private prayer with God.
 Strongly Agree Moderately Agree Agree Disagree Moderately Disagree Strongly Disagree
13. I don't have a personally satisfying relationship with God.
 Strongly Agree Moderately Agree Agree Disagree Moderately Disagree Strongly Disagree
14. I feel good about my future.
 Strongly Agree Moderately Agree Agree Disagree Moderately Disagree Strongly Disagree
15. My relationship with God helps me not to feel lonely.
 Strongly Agree Moderately Agree Agree Disagree Moderately Disagree Strongly Disagree
16. I feel that life is full of conflict & unhappiness.
 Strongly Agree Moderately Agree Agree Disagree Moderately Disagree Strongly Disagree
17. I feel most fulfilled when I'm in close communion with God.
 Strongly Agree Moderately Agree Agree Disagree Moderately Disagree Strongly Disagree
18. Life doesn't have much meaning.
 Strongly Agree Moderately Agree Agree Disagree Moderately Disagree Strongly Disagree
19. My relation with God contributes to my sense of well-being.
 Strongly Agree Moderately Agree Agree Disagree Moderately Disagree Strongly Disagree
20. I believe there is some real purpose for my life.
 Strongly Agree Moderately Agree Agree Disagree Moderately Disagree Strongly Disagree

APPENDIX B

Brief RCOPE

Directions: The following items deal with ways you coped with the diagnosis of being HIV positive. There are many ways to try to deal with problems. These items ask what you did to cope with this negative event. Obviously different people deal with things in different ways, but we are interested in how you tried to deal with it. Each item says something about a particular way of coping. We want to know to what extent you did what the item says. *How much or how frequently*. Don't answer on the basis of what worked or not—just whether or not you did it. Use these response choices. Try to rate each items separately in your mind from the others. Make your answers true FOR YOU as you can. Circle the answer that best applies to you.

1 = Not at all

2 = Somewhat

3 = Quite a bit

4 = A great deal

- | | | | | |
|---|---|---|---|---|
| 1. Looked for a stronger connection with God. | 1 | 2 | 3 | 4 |
| 2. Sought God's love & care. | 1 | 2 | 3 | 4 |
| 3. Sought help from God in letting go of my anger. | 1 | 2 | 3 | 4 |
| 4. Tried to put my plans into action together with God. | 1 | 2 | 3 | 4 |
| 5. Tried to see how God might be trying to strengthen me in this situation. | 1 | 2 | 3 | 4 |
| 6. Asked forgiveness for my sins. | 1 | 2 | 3 | 4 |
| 7. Focused on religion to stop worrying about my problems. | 1 | 2 | 3 | 4 |
| 8. Wondered whether God had abandoned me. | 1 | 2 | 3 | 4 |
| 9. Felt punished by God for my lack of devotion. | 1 | 2 | 3 | 4 |
| 10. Wondered what I did for God to punish me. | 1 | 2 | 3 | 4 |
| 11. Questioned God's love for me. | 1 | 2 | 3 | 4 |
| 12. Wondered whether my church had abandoned me. | 1 | 2 | 3 | 4 |
| 13. Decided the devil made this happen. | 1 | 2 | 3 | 4 |
| 14. Questioned the power of God. | 1 | 2 | 3 | 4 |

APPENDIX C

RCI—10

Directions: read each of the following statements. Using the scale to the right, **CIRCLE** the response that best describes how true each statement is for you.

1 = Not at all true of me	2 = Somewhat true of me	3 = Moderately true of me	4 = Mostly true of me	5 = Totally true of me
1. I often read books and magazines about my faith.			1 2 3 4 5	
2. I make financial contributions to my religious organization.			1 2 3 4 5	
3. I spend time trying to grow in understanding of my faith.			1 2 3 4 5	
4. Religion is especially important to me because it answers many questions about the meaning of life.			1 2 3 4 5	
5. My religious beliefs lie behind my whole approach to life.			1 2 3 4 5	
6. I enjoy spending time with others of my religious affiliation.			1 2 3 4 5	
7. Religious beliefs influence all my dealings in life.			1 2 3 4 5	
8. It is important to me to spend periods of time in private religious thought and reflection.			1 2 3 4 5	
9. I enjoy working in the activities of my religious affiliation.			1 2 3 4 5	
10. I keep well informed about my local religious group and have some influence in its decisions.			1 2 3 4 5	

APPENDIX D

The Sense of Coherence Questionnaire: Short Form

Directions: Here is a series of questions relating to various aspects of our lives. Each question has seven possible answers. Please mark the number which expresses your answer, with numbers 1 and 7 being the extreme answers. If the words under 1 are right for you, circle 1; if the words under 7 are right for you, circle 7. If you feel differently, circle the number which best expresses your feeling. Please give only one answer to each question

1. Do you have the feeling that you don't really care about what goes on around you?

1	2	3	4	5	6	7
Very seldom Or never						Very often

2. Has it happened in the past that you were surprised by the behavior of people whom you thought you knew well?

1	2	3	4	5	6	7
Never happened						Always happened

3. Has it happened that people whom you counted on disappointed you?

1	2	3	4	5	6	7
Never happened						Always happened

4. Until now your life has had:

1	2	3	4	5	6	7
No clear goals or purpose at all						Very clear goals and purpose

5. Do you have the feeling that you're being treated unfairly?

1	2	3	4	5	6	7
Very often						Very seldom or never

6. Do you have the feeling that you are in an unfamiliar situation and don't know what to do?

1	2	3	4	5	6	7
Very often						Very seldom or never

7. Doing the things you do every day is:

1	2	3	4	5	6	7
A source of deep Pleasure & satisfaction						A source of pain & boredom

8. Do you have very mixed-up feelings and ideas?

1	2	3	4	5	6	7
Very often						Very seldom

9. Does it happen that you have feelings inside you would rather not feel?

1	2	3	4	5	6	7
Very often						Very seldom or never

10. Many people—even those with a strong character—sometimes feel like sad sacks (losers) in certain situations. How often have you felt this way in the past?

1	2	3	4	5	6	7
Never						Very often

11. When something happened, have you generally found that:

1	2	3	4	5	6	7
You over- estimated or under- estimated its importance						You saw things in the right proportion

12. How often do you have the feeling that there's little meaning in the things you do in your daily life?

1	2	3	4	5	6	7
Very often						Very seldom or never

13. How often do you have feelings that you're not sure you can keep under control?

1	2	3	4	5	6	7
Very often						Very seldom or never

APPENDIX E

1993 Revised CDC Classification System for HIV Infection

CD4+ T- Lymphocyte COUNT	CLINICAL CATEGORIES		
	(A) Asymptomatic, acute (primary) HIV, or PGL*	(B) Symptomatic, not (A) or (C) conditions	(C) AIDS-indicator conditions
(1) ≥ 500 /microliter	A1	B1	C1
(2) 200-499/ μ L	A2	B2	C2
(3) < 200 μ L	A3	B3	C3

Clinical Categories

Category A consists of one or more of the conditions listed below in an adult or adolescent (≥ 13) with documented HIV infection. Conditions listed in Categories B and C must not have occurred.

Asymptomatic HIV infection Persistent generalized lymphadenopathy
Acute (primary) HIV infection with accompanying illness or history of acute HIV
infection

Category B consists of symptomatic conditions in an HIV-infected adolescent or adult that are not included among conditions listed in clinical Category C and that meet at least one of the following criteria: (a) the conditions are attributed to HIV infection or are indicative of a defect in cell-mediated immunity; or (b) the conditions are considered by

physicians to have a clinical course or to require management that is complicated by HIV infection. **Examples** of clinical conditions in category B include, **but are not limited to:**

Bacillary angiomatosis	Candidiasis, oropharyngeal (thrush)
Hairy leukoplakia, oral	Idiopathic thrombocytopenic purpura
Listeriosis	Peripheral neuropathy
Candidiasis, vulvovaginal; persistent, frequent, or poorly responsive to therapy	
Cervical dysplasia (moderate or severe)/cervical carcinoma in situ	
Constitutional symptoms, such as fever (38.5 C) or diarrhea lasting >1 month	
Herpes Zoster (shingles), involving at least two distinct episodes or more than one dermatome	

Pelvic inflammatory disease, particularly if complicated by tubo-ovarian abscess

For classification purposes, Category B conditions take precedence over those in Category A. For example, someone previously treated for oral or persistent vaginal candidiasis (and who has not developed a Category C disease), but who is now asymptomatic should be classified in clinical Category B.

Category C includes the clinical conditions listed in the AIDS surveillance case definition (listed below). For classification purposes, once a Category C condition has occurred, the person will remain in Category C.

Candidiasis of bronchi, trachea, or lungs	Candidiasis, esophageal
Cervical cancer, invasive	Cryptococcosis, extrapulmonary
Cytomegalovirus retinitis (with loss of vision)	Encephalopathy, HIV-related
Kaposi's sarcoma	Lymphoma, Burkitt's (or equivalent term)
Lymphoma, immunoblastic (or equivalent term)	Lymphoma, primary, of brain
<i>Pneumocystis carinii</i> Pneumonia	Pneumonia, recurrent
Progressive multifocal leukoencephalopathy	<i>Salmonella</i> septicemia, recurrent
Isosporiasis, chronic intestinal (>1 month's duration)	Wasting syndrome due to HIV
Coccidiomycosis (disseminated or extrapulmonary)	Hisoplasmosis, (disseminated or extrapulmonary)
Cryptosporidiosis, chronic intestinal (>1 months/s duration)	Toxoplasmosis of brain
Cytomegalovirus disease (other than liver, spleen or nodes)	
Herpes simplex: chronic ulcer(s) (>1 month's duration); or bronchitis, pneumonitis, or esophagitis	
<i>Mycobacterium avium complex</i> or <i>M. kansasii</i> , disseminated or extrapulmonary	
<i>Mycobacterium tuberculosis</i> , any site (pulmonary or extrapulmonary)	
<i>Mycobacteriu</i> , other species or unidentified species, disseminate or extrapulmonary	

APPENDIX F

Revised HIV Center Medical Staging System (rHCMSS)

Scoring Instructions: Based on history and physical examination data, but independent of CDC classification and immune status, derive a numerical score between 0 and 39 to categorize an individual's HIV-specific health status. First, categorize the individual by one of the major stages: Asymptomatic, Minor Symptoms, Major Symptoms, or AIDS. Second, categorize the severity of symptomatology within the designated stage by assigning a score from 0-9, 10-19, 20-29, or 30-39.

Note that score are assigned for any history or current evidence of a given symptom, once a staging score has been assigned, it cannot decline on subsequent examinations.

ANCHORED INDICATORS ARE APPROXIMATIONS ONLY; actual scores may include all integers and are based on clinical judgment.

1. Interview participant
2. Check medical record

Range	Stage: Description and Indicators
-------	-----------------------------------

0-9	Asymptomatic: Physical symptoms may be attributed to HIV infection, but are not, in themselves, of clinical concern.
-----	---

0 = No history of symptoms

5 = Minor fatigue (less than 25% reduction in normal activity)

9 = > usual URIs

10-19	Minor Symptoms: Limited, but clinically significant symptoms which are not Included below (e.g., persistent generalized lymphadenopathy, oral or vulvovaginal candida, skin and nail infections or rashes, constitutional symptoms of limited duration, episodic diarrhea, fatigue with 25-50% reduction in normal activity, Cervical dysplasia [CIN 1-2]
-------	--

10 = PGL

15 = ≤ 2 symptom episodes: List _____

19 = ≥ 3 symptom episodes: List _____

APPENDIX G

Demographic Information Form

1. Date of birth _____
2. Age at the time of initial HIV diagnosis _____
3. Relationship status

<input type="checkbox"/> Single/No committed relationship	<input type="checkbox"/> Divorced
<input type="checkbox"/> Married/Committed relationship	<input type="checkbox"/> Widowed
4. Race

<input type="checkbox"/> American Indian	<input type="checkbox"/> White	<input type="checkbox"/> Other (please specify) _____
<input type="checkbox"/> Black	<input type="checkbox"/> Hispanic	
5. Gender

<input type="checkbox"/> Female	<input type="checkbox"/> Transgender
<input type="checkbox"/> Male	
6. Date of diagnosis with HIV infection _____
7. Method of HIV exposure

<input type="checkbox"/> Intravenous drug use	<input type="checkbox"/> Homosexual contact	<input type="checkbox"/> Unknown
<input type="checkbox"/> Blood transfusion	<input type="checkbox"/> Heterosexual contact	
<input type="checkbox"/> Other (please specify) _____		
8. Last known CD4+ cell count _____
9. Date of last CD4+ cell count _____
10. Lowest CD4+ count _____
11. Viral load _____
12. AIDS diagnosis status

<input type="checkbox"/> AIDS positive
<input type="checkbox"/> AIDS negative
13. If positive for AIDS, date when first diagnosis was made _____
14. How many people currently live in your household? _____
15. Annual household income level

<input type="checkbox"/> Less than \$10,000	<input type="checkbox"/> \$25,001---40,000	<input type="checkbox"/> \$55,001 or more
<input type="checkbox"/> \$10,001---25,000	<input type="checkbox"/> \$40,001---55,000	

16. Education:
- 1- 6 years 12 (High School Diploma) 4 or more years of college
- 7-11 years 1-3 years of college Graduate college degree
17. Have you ever been diagnosed with a mental health problem? Yes No
18. Are you currently receiving treatment for a mental health problem? Yes No
- If yes, what type of treatment are you receiving?
- Counseling Medication None
19. Religious affiliation
- Buddhist Hindu Jewish None
- Christian Islamic Atheist
- Other (please specify) _____
20. Frequency of participation in religious and/or spiritual activities:
- a. Attendance at place of worship
- Once a week Once a month I don't attend any places of worship
- Twice a month Less than 4 times a year
- b. Prayer
- At least once a day At least 1 time a week I do not pray
- At least 5 times a week Once a month or less
- c. Meditation
- At least once a day At least 1 time a week I do not meditate
- At least 5 times a week Once a month or less
- d. Reading spiritual/religious materials
- At least once a day At least 1 time a week I do not read
- At least 5 times a week Once a month or less spiritual/religious materials
- e. Listening to spiritual/religious music
- At least once a day At least 1 time a week I do not listen to
- At least 5 times a week Once a month or less spiritual/religious music
- f. Watching spiritual/religious programs
- At least once a day At least 1 time a week I do not watch
- At least 5 times a week Once a month or less spiritual/religious programs
- g. Listening to spiritual/religious programs
- At least once a day At least 1 time a week I do not listen to
- At least 5 times a week Once a month or less spiritual/religious programs
- h. Other activity (please specify) _____
- At least once a day At least 1 time a week
- At least 5 times a week Once a month or less

APPENDIX H*Demographic Data Summary*

	<i>N</i>	Percent
Marital Status		
Divorced	2	5.1
Married	8	20.5
Separated	2	5.2
Single	24	61.5
Widowed	2	5.1
Religious Denomination		
Christian	30	76.9
No Religion	4	10.3
Multiple Religions	2	5.2
“Spiritual”	1	2.6
Annual Income		
\$ 10,000 or less	24	61.5
\$ 10,001-25,000	7	17.9
\$ 25,001-40,000	4	10.3
\$ 40,001-55,000	2	5.1
Not reported	2	5.1
Diagnosed with mental disorder		
No	17	43.6
Yes	22	56.4
Received treatment for mental disorder		
No	23	59.0
Yes	16	41.0

Demographic Data Summary

	<i>N</i>	Percent
Type of mental health treatment received		
Mental health counseling	2	5.1
Medication for mental diagnosis	5	12.8
Both counseling & medication	9	23.1
No treatment received	22	56.4
Did not answer the question	1	2.6
Number of years HIV positive		
0 – 5	9	23.0
6 – 15	16	41.0
16 – 20	11	28.2
21 – 30	2	5.1
Unknown	1	2.6
CDC classification		
C3	23	59.0
C2	3	7.7
B3	4	10.3
B2	7	17.9
A3	1	2.6
A2	1	2.6
Participants who pray		
Don't Pray	0	0
Once per month or less	1	2.6
At least once a week	4	10.3
At least 5 times per week	4	10.3
At least once per day	30	76.9
Participants who meditate		
Don't meditate	15	39.5
Once per month or less	1	2.6
At least once per week	8	21.1
At least 5 times per week	5	13.2
At least once per day	9	23.7
Participants who read spiritual/religious material		
Don't read	8	20.5
Once per month or less	5	12.8
At least once per week	9	23.1
At least 5 times per week	5	12.8
At least once per day	12	30.8

Demographic Data Summary

	<i>N</i>	Percent
Participants who listening to spiritual/religious music		
Don't listen	4	10.3
Once per month or less	3	7.7
At least once per week	18	46.2
At least 5 times per week	3	7.7
At least once per day	11	28.2
Participants who watch spiritual/religious programs		
Don't watch	9	23.1
Once per month or less	3	7.7
At least once per week	16	41.0
At least 5 times per week	3	7.7
At least once per day	8	20.5
Participants who listen to spiritual/religious programs		
Don't listen	8	20.5
Once per month or less	4	10.3
At least once per week	13	33.3
At least 5 times per week	4	10.3
At least once per day	10	25.6
Participants who attend a place of worship		
Don't attend	12	30.8
Less than 4 times per year	4	10.3
Once per month	2	5.1
Twice per month	4	10.3
Once per week	17	43.6

Note. CDC = Centers for Disease Control

VITA

- Personal Information: Rachel Kidd Cobb
Born in Newport News, Virginia on July 30, 1948
- Citizenship: Citizen of the United States of America.
- Education: **Doctor of Philosophy, Nursing**, May, 2008
Virginia Commonwealth University (VCU), Richmond, Virginia
Dissertation: How Much Does Spirituality Contribute to Health Status in People Living with HIV-Disease?
- Master of Divinity Degree**, May, 1993
Baptist Theological Seminary at Richmond, Richmond, Virginia
- Bachelor of Science, Nursing**, December, 1986
Virginia Commonwealth University, Richmond, Virginia
- Diploma, Nursing**, May, 1982
Southside Regional Medical Center (SRMC), Petersburg, Virginia
- Associate in Science Degree, General Studies**, June, 1979
Southside Virginia Community College (SVCC), Lawrenceville, Virginia
- Honors: Sigma Theta Tau International, 2008
Phi Kappa Phi Scholarship, fall, 2002
National Dean's List, VCU, 1986-1987
Roberta-Cox-Grossman Award, SRMC, 1982
Lavenstein Memorial Scholarship, SRMC, 1981
Graduated "With High Honors", Southside Virginia Community College, 1979
Who's Who Among Students In American Junior Colleges, SVCC, 1978
- Presentations: Poster presentation, The Third Annual Interdisciplinary Conference:
Spirituality: Education, Research, and Practice. Tuck, I. & Cobb, R. *The*

concept of spirituality: A content analysis of responses from participants in a series of spiritual growth groups. April, 2002

Poster presentation, The Third Annual Interdisciplinary Conference: Spirituality: Education, Research, and Practice. *Images of healing following civil war in an East African country.* April, 2002.

Professional Experiences:	2007-2008	Adjunct Faculty, VCU, School of Nursing
	2004-2007	Health & Wellness Coordinator/Parish Nurse Consultant, Woman's Missionary Union of Virginia
	2002-2003	Adjunct Faculty, VCU School of Nursing
	2001-2002	Research Associate. Pilot Project for Spiritual Growth Group Intervention in Local Churches. Project supported by Department of Integrative Systems, School of Nursing, VCU. Dr. Inez Tuck, PhD, M.B.A., Principal Investigator.
	2000-2003	Research Associate. Project Title: PNI-Based Stress Management Interventions in HIV Disease. RO1 Grant National Institute of Nursing Research, NIH, \$2,863,000. Nancy McCain, D.N.Sc., Principal Investigator.
	1991-1995, 1997-2004,	
	2008-Current	Staff nurse, ICU, St. Mary's Hospital, Richmond, VA
	1995-1997	Volunteer Nurse, International Service Corp, East Africa
	1991-1995	Staff nurse, CCU/ICU, St. Mary's Hospital, Richmond, VA,
	1986-1990	Assistant Vice President of Nursing Services, Community Memorial Healthcenter, South Hill, VA
	1985-1986	Coronary Care Unit Assistant Head Nurse, Henrico Doctor's Hospital, Richmond, VA
	1983-1985	ICU Head Nurse, Community Memorial Healthcenter, South Hill, VA
	1982-1983	RN Staff nurse, ICU, Community Memorial Healthcenter, South Hill, VA
1979-1982	LPN staff nurse, Southside Regional Medical Center, Petersburg, VA	
1971-1979	LPN staff nurse, Community Memorial Healthcenter, South Hill, VA	
Committee Membership:	2002-2003	Doctoral Student Representative on Admission's Committee, VCU, School of Nursing. Richmond, VA
	2002	Doctoral Student Representative on Yingling Scholar Committee, VCU, School of Nursing,, Richmond, VA

	2002	Doctoral Student Representative on Appointment, Promotion, Tenure Committee, VCU, School of Nursing, Richmond, VA
Volunteer Service:	2004	Volunteer Missionary, Slovakia, July 1-22
	2004	Volunteer Nurse, Honduras, September 17-26
	200-Current	Volunteer Parish Nurse, Parish Health Ministry, First Baptist Church, Richmond, VA