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UNIVERSITY OF SAN DIEGO
Hahn School of Nursing and Health Science
DOCTOR OF PHILOSOPHY IN NURSING

SPIRITUALITY AND SYMPTOM SELF MANAGEMENT OF OSTEOARTHRITIS

by

Lois M. Kannan

A dissertation presented to the
FACULTY OF THE HAHN SCHOOL OF NURSING AND HEALTH SCIENCE
UNIVERSITY OF SAN DIEGO

In partial fulfillment of the
requirements for the degree
DOCTOR OF PHILOSOPHY IN NURSING

July 2008

Dissertation Committee

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ABSTRACT

Healthcare providers need to identify holistic self-care techniques that are endorsed by patients as effective strategies for symptom management of osteoarthritis, which is the single most common cause of disability in older adults. Research in this area may direct the development of interventions to ensure that older adults are afforded every opportunity to remain active and productive, with an improved health related quality of life, despite age related musculoskeletal conditions. The purpose of this study was to describe the relationships among symptom experience, symptom management, and symptom outcome based on spiritual well-being.

A quantitative, descriptive, correlational, and noninterventional study design, guided by the Revised Symptom Management Conceptual Model (Dodd et al., 2001), examined the relationships among osteoarthritis pain, stiffness, and physical function, spiritual practices, and quality of life. Data from six self-report instruments were collected during an interview from a convenience sample of 68 participants, clinically diagnosed with osteoarthritis, recruited from senior centers, retirement communities, and physician offices, in San Diego County.

Study findings revealed: (a) greater spiritual existential well-being was significantly associated with improved physical function ($r = -.294$, $p = .015$), (b) higher levels of spiritual existential well-being were associated with men ($r = -.268$, $p = .027$), adequate financial resources ($r = -.480$, $p = .000$), higher education ($r = .268$, $p = .027$), and current employment ($r = -.371$, $p = .002$), (c) age, marital status and osteoarthritis demographics were not significantly correlated with spiritual well-being, (d) greater spiritual existential well-being scores were significantly related to overall quality of life ($r = .484$, $p = .000$),

interpersonal relationships ($r = .342$, $p = .004$), well-being ($r = .349$, $p = .003$), and transcendence ($r = .298$, $p = .014$). Further research is warranted to include: (a) study replication with a more symptomatic sample, utilizing an additional quality of life measure, (b) binary factor analysis for instrument development, and (c) interventional studies with patient endorsed spiritual practices.

Key words: spirituality; self-transcendence; health; well-being; osteoarthritis.

DEDICATION

For the best husband and friend in the universe,

this dissertation is dedicated to

Michael James Kannan,

with love, admiration and gratitude

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To the casual observer, a doctoral dissertation may appear to be solitary work. However, to complete a project of this magnitude required a network of support, and I am indebted to many people. I acknowledge the members of my dissertation committee, Patricia Roth, EdD, RN, and Mary Scherr, PhD, for their patience, invaluable feedback, and constant reinforcement during this important academic and professional process. I am most especially grateful to my chair Linda Robinson PhD, RN, for believing in me and the value of this topic. The author is also grateful to Dale Glaser PhD, for helpful direction with data analysis.

I am thankful for my loving and lifelong friends, Mary, Ginny, Kathy, Cassie, Jay, Nancy, and Eleanor. They are always there when needed. I recognize my daughters, Kelly and Trisha, and I am appreciative of their significant contribution. Kelly and her scientific mind, kept me grounded and focused during the examination of an abstract topic. Trisha utilized her literary talents to carefully edit and kindly present feedback, while at the same time she became a powerful motivator for me as she expressed her pride in my endeavors. The intellectual and emotional support from these individuals has been a source of scholarly and personal growth for me. The journey will always be cherished.

TABLE OF CONTENTS

Dedication.....	ii
Acknowledgments.....	iii
Table of Contents.....	iv
List of Tables.....	viii
List of Illustrations.....	ix
List of Appendices.....	x
Chapter 1 Introduction.....	1
Social Significance.....	1
Theoretical Significance.....	3
Conceptual Framework.....	5
Purpose.....	7
Research Questions.....	8
Importance for Nursing.....	8
Chapter 2 Review of Literature.....	10
Spirituality.....	10
Conceptual knowledge.....	11
Approaches.....	12
Key Attributes.....	13
Consequences.....	15

Definition.....	15
Theoretical knowledge.....	17
Empirical knowledge.....	19
Sociological Approach.....	20
Psychological Approach.....	25
Combined Sociological and Psychological Approach.....	32
Osteoarthritis.....	38
Diagnosis.....	38
Treatment Aims.....	40
Non-pharmacologic management.....	40
Pharmacologic management.....	42
Surgical management.....	44
Treatment effectiveness with management of symptoms.....	45
Chapter 3 Methods and Procedures.....	48
Research Design.....	48
Sample.....	48
Sample Size.....	49
Sites for Recruitment of Subjects.....	49
Recruitment Protocol.....	51
Criteria for Subject Selection.....	52
Instruments.....	53

Demographic Profile Questionnaire.....	53
Geriatric Depression Scale (GDS).....	53
Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC).....	55
Spiritual Well-Being Scale (SWBS).....	56
Spiritual Practices Profile (SPP).....	59
Missoula-Vitas Quality of Life Index.....	60
Data Collection Procedures.....	61
Protection of Human Subjects.....	65
Data Analysis Plan.....	66
Limitations.....	67
Chapter 4 Results and Discussion.....	69
Results.....	69
Demographic Data.....	69
General Demographics.....	69
Osteoarthritis Demographics.....	72
Spiritual Inner Resource.....	72
Symptom Experience.....	73
Depression.....	74
Symptom Management.....	75
Symptom Outcome.....	77

Relationships Between Level of Spiritual Well-Being and Particular Demographics.....	78
Relationships Between Level of Spiritual Well-Being and Perceived Pain Joint Stiffness and Physical Function.....	79
Relationships Between Level of Spiritual Well-Being and Quality of Life...	80
Discussion of the Findings Related to the Research Question.....	81
Relationship Between Spiritual Well-Being and Demographic Variables.....	81
Relationship Between Spiritual Well-Being and Symptom Experience.....	81
Use of Spiritual Practices.....	82
Frequency and Effectiveness of the Spiritual Practices Employed.....	82
Relationship Between Spiritual Well-Being and Quality of Life.....	83
Chapter 5 Conclusion and Implications.....	84
Conclusions.....	84
Implications.....	85
Recommendations.....	87
Nursing Practice.....	87
Nursing Education.....	88
Nursing Research.....	89
References.....	91
List of Appendices.....	108

LIST OF TABLES

Table 1:	Spirituality Defined.....	16
Table 2:	Literature Review within the Sociological Dimension of Spirituality.....	20
Table 3:	Literature Review within the Psychological Dimension of Spirituality.....	26
Table 4:	Literature Review within the Combined Sociological and Psychological Dimension of Spirituality.....	33
Table 5:	Recruitment Outcome Summary.....	50
Table 6:	Instrument Summary.....	63
Table 7:	Summary of Statistical Methods Used to Answer Each Research Questions.....	67
Table 8:	General Demographics of the Sample.....	71
Table 9:	Osteoarthritis Demographics of the Sample.....	72
Table 10:	Descriptive Statistics for Study Variables Measuring Spiritual Well-Being Resource SWBS (N=68).....	73
Table 11:	Descriptive Statistics for Study Variables Measuring Symptom Experience WOMAC (N=68).....	74
Table 12:	Descriptive Statistics Related to Use and Effectiveness of Spiritual Practices.....	76
Table 13:	Descriptive Statistics for Study Variables Measuring Quality of Life Symptom Outcome MVQOLI (N=68).....	77
Table 14:	Correlation Coefficients for Spiritual Well-Being and Demographics (N=68).....	78
Table 15:	Correlation Coefficients for Level of Spiritual Well-Being and Perceived Pain, Joint Stiffness, and Physical Function (N=68).....	79
Table 16:	Correlation Coefficients for Level of Spiritual Well-Being and Quality of Life Symptom Outcome (N=68).....	80

LIST OF ILLUSTRATIONS

Figure 1:	Conceptual and Theoretical Framework.....	7
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LIST OF APPENDICES

Appendix A:	Approval from University of San Diego Institutional Review Board.....	108
Appendix B:	Informational Letter to Health Care Provider.....	109
Appendix C:	Recruitment Flier.....	110
Appendix D:	Research Participant Informed Consent Form.....	111
Appendix E:	Demographic Profile Questionnaire.....	114
Appendix F:	Geriatric Depression Scale.....	115
Appendix G:	Western Ontario McMaster Universities Osteoarthritis Index.....	116
Appendix H:	Spiritual Well-Being Scale.....	117
Appendix I:	Spiritual Practices Profile.....	118
Appendix J:	Missoula-Vitas Quality of Life Index.....	120
Appendix K:	Approval Documents for Use of Copyrighted Material.....	123

Chapter I

Introduction

This chapter provides an overview of the research to examine spirituality and symptom self management of osteoarthritis. The information contained in this chapter is presented within seven sections. It begins with the social and theoretical significance of the study, followed by the purpose, research questions, hypotheses, conceptual framework, assumptions, and the importance for nursing.

Social Significance

Osteoarthritis is a debilitating, progressive disease that presents throughout adulthood, principally affecting the elderly (Fajardo & Di Cesare, 2005). The incidence of the condition increases with age. Concern over the rising prevalence of arthritis reflects an unprecedented growth in the elderly. Demographics predict that in North America the population should increase in number across all age groups, but growth rates are notably higher for those aged 60-69 (112.7%), 70-79 (104.3%), and, particularly, among those 80 years and older (234.3%). Western Europe should see the number of inhabitants above age 60 increase sharply as well. The projected growth of the population above age 60 suggests a sharp increase in the prevalence of osteoarthritis for at least the four forthcoming decades (Ethgen & Reginster, 2004).

Osteoarthritis is the most prevalent form of arthritis in the United States, and is often associated with significant pain and disability (Scott, 1993). Knee or hip pain from osteoarthritis is the leading cause of disability in elders (Dieppe, 1995; Tsai & Tak,

2003). The pain occurs during the performance of certain activities and is exacerbated by activities involving the lower extremities. These activities include rising from a chair, walking, standing, or climbing stairs. To prevent further discomfort, elders may avoid these activities, become physically unfit, and are thus, more prone to further disability (Tsai & Tak, 2003). Modern societies should be willing to ensure that the elderly are afforded every opportunity to remain active, productive, and healthy, despite age related chronic disease. Future healthcare management costs will result from an increase in the prevalence of age related disabling conditions such as osteoarthritis (Ethgen & Reginster, 2004).

There is no cure for osteoarthritis and it continues to be a difficult chronic illness to treat. Current treatment focuses mainly on relieving pain and maintaining physical joint function (Fajardo & Di Cesare, 2005). Extensive research has supported different modes of treatment including medications, non-pharmacological measures (exercise, weight loss, and education), and surgical procedures (Mazieres et al., 2005).

Pharmacological treatment with non steroidal anti-inflammatory drugs has been widely used to relieve pain. However, these drugs are associated with significant toxicity and many have been removed from the market (Towheed, Shea, Wells, & Hochberg, 2004). Despite the number of therapies available to patients with osteoarthritis, persistent pain and stiffness remains a daily experience for many. Therefore, additional strategies for symptom management warrant further study.

The cost of osteoarthritis and its varied treatments is a tremendous burden to society. Osteoarthritis is a disabling condition that affects 27 million people in the United States

(Lawrence et al., 2008), and accounts for \$15.5 billion dollars of medical expenditures each year (Tsai & Tak, 2003). Total healthcare expenditure for those reporting arthritis approaches 3% of the Gross National Product (GNP) (Ethgen & Reginster, 2004). The extent of the burden on society remains underappreciated, despite the fact that the federal government, concomitantly with health professionals and patient organizations, has launched the Bone and Joint Decade for the years 2000 to 2010. This international campaign is aimed at improving health related quality of life for people with musculoskeletal conditions, by giving patients knowledge and information (Harris, 2001).

Unfortunately, arthritis is still often viewed by the public as a normal part of aging, despite attempts made to highlight arthritis as an extending public health problem. It is important to change current opinion on osteoarthritis, to increase knowledge for controlling symptoms, to postpone disability, and to assist patients to manage the suffering that occurs on a daily basis. Healthcare providers need to become responsible for assisting suffering patients in developing self-care techniques that are accessible to all people on a minute to minute, hour to hour basis as they struggle to manage their symptoms. Current apathy regarding osteoarthritis may have prevented both patients and health professionals from devising effective symptom management interventions (Ethgen & Reginster, 2004).

Theoretical Significance

Living with chronic illness is hard. In illness contexts where there are no cures, treatment is aimed at reducing symptoms and maintaining quality of life. People living with osteoarthritis have to manage the physical, psychological, and social impact that

chronic pain and stiffness impose on their daily lives. One such resource for symptom management of chronic illness that has not been adequately studied is spirituality, and the sense of spiritual well-being, that may result in spiritual practices that patients use to manage their osteoarthritis symptoms. Spiritual practices as a symptom management method falls under the rubric of alternative or complementary therapies. These spiritual practices may include prayer, church attendance, and/or existential activities, such as meditation, relaxation, listening to music, or others. While it is clear that increasing numbers of chronically ill patients are utilizing these self care practices and activities, it is unknown whether these practices and activities are effective in reducing symptoms. The National Institute of Health established The National Center for Complementary and Alternative Medicine or NCCAM in October, 1998 to promote studies of the efficacy of these complementary therapies.

The potential benefit of utilizing spiritual practices, including existential activities, would be especially useful in treating symptoms of osteoarthritis. These could be readily available and limited in cost. There would be no toxicities or side effects. Although spiritual practices have been studied as a symptom management strategy in patient samples with HIV/AIDS (Chou, Holzemer, Portillo & Slaughter 2004; Simoni & Ortiz, 2003; Somiai et al., 1996; Tuck, McCain, & Elswick, 2001), obesity (Popkess-Vawter, Yoder, & Gajewski, 2005), cancer (Kaczorowski, 1989; Fernsler, Klemm, & Miller, 1999), cancer pain (Otis-Green, Sherman, Perez, & Baird, 2002), diabetes (Baldwin, 2005; Landis, 1996; Polzer & Miles, 2005), rheumatoid arthritis (Bartlett, Piedmont, Bilderback, Matsumoto, & Bathon, 2003), multiple sclerosis (McNulty, Livneh, &

Wilson, 2004), acute myocardial infarction (Walton, 2002), recovery from heart surgery (Contrada et al., 2004), congestive heart failure (Westlake et al., 2002), sickle cell disease (Harrison et al., 2005), and end stage renal disease (Tanyi & Werner, 2003), no studies could be found pertaining to its application with osteoarthritis and, therefore, is the focus of this study. Findings from this study will advance theoretical understanding of how spirituality can be defined, measured, and applied as a self-care activity to manage symptoms of osteoarthritis.

Conceptual Framework

The Revised Symptom Management Conceptual Model ((Dodd et al., 2001), was chosen to guide this study of spiritual self management practices among patients with osteoarthritis. The Model has been applied in numerous chronic illness studies examining HIV, breast cancer, diabetes, asthma, myocardial infarction and after coronary artery bypass graft surgery. No studies could be found where the model has been applied in the context of osteoarthritis.

The model is comprised of three concepts: the symptom experience, symptom management, and outcomes. The concept symptom experience was represented by the variables of osteoarthritis pain, joint stiffness, and physical function. The study of symptoms is based on the perception of the individual experiencing the symptom and his/her self-report (Dodd et al., 2001). The concept of symptom management was represented by the variable of spiritual practices including religious and existential activities. The concept of outcome was represented in this study by the variable of quality of life.

The interrelatedness of these three concepts is the basic premise of the model and the primary reason for using the model to guide this study. Effective management of osteoarthritis symptoms, demands that the symptom experience, the strategy, and the outcome, all be considered in research. For example, the management of a symptom begins with the patient's assessment of the symptom, and outcomes emerge from the individual's perception of the symptom experience, as well as, from the response to symptom management strategies. Each concept influences the other and in some circumstances symptom experience may not be able to be changed, but symptom outcomes such as quality of life may be.

The elements of person, health, illness, and environment are contextual variables that influence the three concepts (symptom experience, management strategies, and outcomes) of the Revised Symptom Management Conceptual Model. The person domain is the focus for this study and was represented by demographic characteristics and a measure of spiritual well-being. The person domain is intrinsic to the way an individual views and responds to the symptom experience (Dodd et al., 2001). The model is based on the assumption that symptom management is a dynamic process that is modified by the influences of the nursing domains of person, health/illness, or environment. Figure 1 represents the conceptual and theoretical linkages in this study.

Figure 1 Conceptual and Theoretical Framework. Adaptation of the Revised Symptom Management Conceptual Model Copyright 2001 by Blackwell Publishing.

Purpose

The purpose of the study was to examine the relationships among symptom experience, symptom management strategies, and symptom outcome based on spiritual well-being. Guided by the Revised Symptom Management Model the relationships among osteoarthritis pain, stiffness, and functional status, spiritual self management practices, and quality of life were examined.

Research Questions

This study sought answers to the following research questions:

1. Is there a relationship between level of Spiritual Well-Being and particular demographics, perceived pain, joint stiffness, or functional status of primary care clients with osteoarthritis?
2. Do primary care clients with osteoarthritis use spiritual practices to manage their symptoms?
3. What are the spiritual practices they employ, how frequently are they used, and how effective do they perceive them to be?
4. Is there a relationship between level of Spiritual Well-Being and quality of life for primary care clients with osteoarthritis?

Importance for Nursing

The search for spiritual answers is important for many people. Surveys of the general population (Gallup, 1990) and patients (Maugans & Wadland, 1991) indicate that 90% of people believe in a Higher Being. King and Bushwick (1994) found similar survey results emphasizing the value of spirituality for individuals, where, 94% of patients regard their spiritual health and their physical health as equally important. Furthermore, people are increasingly frustrated by the impersonal managed health care system in the United States, and they are looking elsewhere for answers to their health concerns (Gundersen, 2000). People are searching for peace, meaningful lives, and connections with others (Walsh, 1999).

Interest in patient spirituality has increased, because a growing body of research has

shown an association between spirituality and better health outcomes (Gundersen, 2000). Understanding of spirituality has evolved beyond religious practices to encompass existential perspectives that are integral to maintaining well-being for the chronically ill. The spiritual dimension of care is a valid concern within the nursing profession. A deeper understanding of spirituality enhances the potential for nurses to incorporate spiritual caring into practice. Incorporating spiritual care into nursing practice is congruent with nursing's commitment to holistic practice (O'Neill & Kenny, 1998). Polzer and Miles (2005) posit that it is imperative for nurses to understand the relationship between spirituality, health, and self-management of illness to provide culturally competent care.

Pain, stiffness, changes in functional ability, and the uncertain, long-term character of chronic illness can lead to an alteration in well-being. Faced with these realities, people with chronic illness may struggle with the loss of connectedness. This chapter has highlighted the significance of studying the relationship of spirituality to pain, stiffness, and function for the older adult diagnosed with osteoarthritis. A description of the strength of association between spirituality and the study variables is needed to increase the knowledge base concerning health outcomes for the older individual with osteoarthritis. With this knowledge, nurses can begin to assess and plan specific approaches to the care and support of individuals living with chronic osteoarthritis.

Chapter 2

Review of Literature

This chapter provides a review of the literature, beginning with an overview of the abstract concept of spirituality and the chronic disease osteoarthritis. Chronic, nonmalignant pain like that of osteoarthritis is characteristically resistant to treatment, with only about 50% of patients reporting adequate relief (Howell, 1994). Treatment suggestions by healthcare providers fail to effectively reduce the pain of osteoarthritis, and patients begin searching for self-care solutions to ameliorate the frequency and intensity of their pain. Understanding the self-care strategies that patients use to manage their symptoms is critical for health care providers to assist patients.

Conceptual, theoretical, and empirical literature regarding both the independent variable of spiritual well-being and the dependent variables of osteoarthritis pain, joint stiffness, and function is reviewed and critiqued. A comprehensive review of the vast body of literature relevant to spirituality and osteoarthritis is presented. The search results from Cinahl, Medline, and PsychInfo, represent the fields of medicine, nursing, psychology, theology, pastoral care, and sociology.

Spirituality

Rhetoric about spirituality and nursing has greatly increased, as scientific-based approaches are not fully able to address human problems concerning health and illness.

Increased speculation regarding the nature of spirituality was caused by a recent resurgence of interest in non-medical sources of healing and holistic medical practice. Barnum (1995) suggested that nursing and society as a whole are increasingly embracing a worldview that recognizes the limitations of science, and places increased value on human experiences.

There has been a resurgence of interest over the last two decades in the spiritual dimension of care as a valid concern within the nursing profession. Consequently, significant emphasis has been placed on spirituality in nursing grand theory (Newman 1986; Parse, 1987; Watson, 1988; Rogers, 1990), mid-range theory (Smith, 1994; Reed, 1992; Younger, 1995), practice, and education. The renewed focus on incorporating spiritual care into nursing practice is congruent with nursing's commitment to holistic practice. As interest in alternative and complementary medicine has grown, the notion of linking spirituality with nursing interventions has become widely popular, yet the link is also difficult since there is no consensus on spirituality's definition. Spirituality has evolved beyond religious considerations to encompass existential perspectives that are integral to maintaining well-being (O'Neil & Kenny, 1998).

Conceptual Knowledge of Spirituality

This section reviews the conceptual literature on spirituality. The articles included for review within this section are based on the following criteria: the author defined spirituality, presented a review of the literature on spirituality, or used a conceptual analysis strategy. A total of 19 articles were retrieved for this analysis from the field of nursing, psychology, and sociology (Stoll, 1979; Burkhardt, 1989; Emblen, 1992;

Goddard, 1995; Marchais, Grize & Randrup, 1995; Oldnall, 1996; Dyson, Cobb & Forman, 1997; Goldberg, 1998; O'Neill & Kenny, 1998; Meraviglia, 1999; Narayanasamy, 1999; Mattis, 2000; Baldacchino & Draper, 2001; McSherry & Ross, 2002; Musgrave, Allen & Allen, 2002; Coyle, 2002; Tanyi, 2002; Newlin, Knafl & Melkus, 2002; Henery, 2003). This section explores the accumulated knowledge surrounding the approaches, the key attributes, the consequences, and the possible definitions of spirituality.

Approaches to Spirituality.

There was general agreement among the authors cited that religion and spirituality are different, although the terms often are used interchangeably (Burkhardt, 1989; Tanyi, 2002; Emblen, 1992; Dyson, Cobb & Forman, 1997; Meraviglia, 1999; Oldnall, 1996; Baldacchino & Draper, 2001). According to Coyle (2002), it was clear from the nursing literature that spirituality is not to be confused with religion; however, the scientific and religious discourse surrounding this issue do not achieve conceptual clarity for the term spirituality (Henery, 2003). From a sociological perspective, Coyle (2002) provided a framework to clarify the scientific and religious discourses surrounding the concept of spirituality.

Coyle (2002) used a conceptual analysis strategy to compare the similarities and differences of key attributes of spirituality identified in the literature. The analysis supported that a tension exists between religion and spirituality, and suggested three different ways of viewing spirituality. The three ways were termed the structural-behaviorist approach, the transcendent approach, and the value guidance approach. The

structural-behaviorist approach fused spirituality with religion, and focused on the attributes of belief in God and connectedness to God. The transcendent approach reconstructed spirituality within the social science disciplines, such as psychology. Connectedness, meaning, purpose in life, and inner strength are attributes associated with this approach. The value guidance approach, derived from the sociological theoretical position of Marxism and neo-Marxism, explained and understood society as interpreted through the grid of class struggle and economics. Within this particular grid, "God" is taken to be "any" firmly held value that gives life meaning and purpose. Thus, belief systems, which articulate values, were based on material relationships and may be viewed as a reflection of spirituality. One could argue that this approach, although valuable in understanding and explaining human behavior within organized societies, may be indicative of individuals who do not acknowledge or have not developed the metaphysical nature of spirituality. Coyle (2002) cited potential problems within the value guidance approach that need further investigation. The recognition of different approaches to spirituality result in a better understanding of health benefits in terms of prevention, improved health status, recovery from illness, or the enablement of people to cope with illness and adversity (Coyle, 2002).

Key Attributes of Spirituality.

Literature review and concept analysis strategies in the nursing literature were used to identify key attributes of spirituality. Reflection on the literature by Dyson, Cobb & Forman (1997) revealed that the self, others, and God provide key elements within the concept of spirituality. After a critical analysis of the literature, Meraviglia (1999)

identified key elements of spirituality as: reflecting faith in God or a supreme being, a connectedness with oneself, others, nature, or God, and an integration of all human dimensions.

The first formal concept analysis of spirituality by Burkhardt (1989) identified discovery of meaning and purpose in life, harmony in relationship to self, others, God, or a higher being, and inner strength as attributes of spirituality. Concept analysis by Tanyi (2002) included belief and faith, connectedness, inner strength and peace as attributes of spirituality. Newlin, Knafl, and Melkus (2002) utilized concept analysis to capture the current status of the concept of spirituality. The results of their analysis suggested that spirituality in black and white Americans commonly shares several global defining attributes: transcendence, faith, hope, inner strength, identification of meaning and purpose in life, and interconnectedness with self, others, God, or a higher power. In addition to global attributes, certain defining characteristics of guidance, coping, and peace appear to be culturally prominent for African-American spirituality.

According to Mc Sherry and Ross (2002), the term spirituality was not bound by a common set of defining characteristics, and the term could mean different things to different people. Considerable evidence from a psychological perspective indicated that the human cognitive system of understanding information consists of at least two subsystems: one rational-scientific and the other intuitive-spiritual (Marchais, Grize, & Randrup, 1995). Since these subsystems work on overlapping databases in a parallel fashion, they probably influence each other. Intuitive and spiritual ideas can be contemplated rationally and give rise to rational-scientific conclusions, which may again

give rise to new intuitive ideas (Marchais et al.)

Consequences of Spirituality.

The consequences of spirituality, as delineated by Burkhardt (1989) and Meraviglia (1999), were a sense of hope and peace, love and joy, meaning and purpose in life, self-transcendence, and a sense of spiritual, psychological, and physical health and well-being. Coyle (2002) suggested that spirituality motivates, enables, empowers, and provides hope. The concept analysis by Newlin, Knafl, and Melkus (2002) of African-American spirituality yielded consequences within four broad categories: divine reciprocity, heightened interpersonal connectedness, emotional equilibrium, and empowering change. Outlier consequences were identified as conflict, life satisfaction, and improved self-esteem.

Defining spirituality.

Achieving what could be considered a comprehensive definition of spirituality has presented difficulty for all authors consulted for the literature review. For this study, spirituality was defined as an immaterial thing consisting of an incorporeal essence (OED 2nd Ed., 1989, p.259). The essence, or distinctive qualities, of spirituality were sociological and/or psychological in nature. Declaring the essence of the descriptive definitions clarified the nature of the term spirituality. Table 1 represents spirituality as defined in the Oxford English Dictionary and in the reviewed conceptual literature. The definitions are presented chronologically in three groups, which arose from the literature according to the quality that is described.

Table 1

Spirituality Defined

Definitions	Source
4) An immaterial or incorporeal thing or substance	OED, 2 nd Ed., 1989 p 259
6) The fact or condition of being spirit or of consisting of an incorporeal essence	
<i>Sociological essence</i>	
Personal life principle that animates transcendent quality of relationship with God or God being	Emblen, 1992, p. 45
A relational phenomena and the internalization and expression of key values	Mattis, 2000, pp. 114-115
African-American spirituality is faith in an omnipotent, transcendent force; experienced internally and/or externally; caring interconnectedness with others, God, or a higher power; manifested as empowering transformation of and liberating consolation for life's adversities; and thereby inspiring fortified belief in and reliance on the benevolent source of unlimited potential	Newlin, Knafl, & Melkus, 2002, p. 9
<i>Psychological essence</i>	
A quality that goes beyond religious affiliation, that strives for inspiration, reverence, awe, meaning and purpose, even in those who do not believe in any God	Narayanasamy, 1991, p. 3
Spirituality is a personal search for meaning in life, which may or may not be related to religion	Tanyi, 2002, p. 11
<i>Sociological and Psychological essence</i>	
A dimension within every person; the vertical dimension of the person's relationship with the transcendent (God, supreme being or supreme values) and the horizontal dimension of relationships with oneself, other people and the natural world	Stoll, 1989, p. 7
Integrative energy	Goddard, 1995, p. 11
Experiences and expressions of one's spirit in a unique and dynamic process reflecting faith in God or a supreme being; a connectedness with oneself, others, nature or God; and an integration of all human dimensions	Meraviglia, 1999, p. 18

This study was inclusive of these definitions, and referred to spirituality in the context of spiritual well-being. Conceptually, Ellison (1983) viewed spiritual well-being as a construct composed of two dimensions: religious well-being, which is a vertical dimension that described well-being as it relates to God, and existential well-being, which is a horizontal dimension that addressed well-being as it relates to a sense of life purpose and life satisfaction without any specific religious reference. Ellison (1983) and Paloutzian and Ellison (1982) reasoned that quality of life may be conceptualized to involve material, psychological and spiritual well-being. Well-being was defined by Reed (1987) as a sense of satisfaction with one's current life.

Theoretical Knowledge of Spirituality

The conceptual knowledge contributed to the development of theories that focus on spirituality as an important factor in maintaining health and well-being (Frankl, 1963, 1969; Gall et al., 2005; Moch, 1998; Newman, 1986; Parse, 1987; Reed, 1991; Watson, 1988; Rogers, 1990), coping with stress (Gall et al., 2005; Lazarus & Folkman, 1984; Neuman, 1989; Younger, 1995), and managing chronic illness and suffering (Younger, 1995). The conceptual knowledge of spirituality and spiritual well-being (as a combination of religious and existential well-being), contributed to the development of theories that focus on the overlapping concepts of transcendence and relationships, that occur within the combined sociological and psychological approaches to understanding spirituality.

Spirituality is theoretically identified as an important factor in maintaining health and well-being, and in coping with illness. Central to the understanding of spirituality in

maintaining health and well-being is the work of psychoanalyst and philosopher, Viktor Frankl (1963, 1969). He drew upon his experiences as a prisoner in a Nazi concentration camp to develop an existential theory that identified people as spiritual beings. Frankl (1963) proposed that the spiritual task of human beings was to find meaning in life through self-transcendence. An existential perspective that identified the importance of self-discovery and illuminating meaning was evident in the grand nursing theories of Newman (1986), Parse (1987), Watson (1988), and Rogers (1990).

Reed's (1992) mid-range theory of self-transcendence drew upon the work of Frankl (1969) and Rogers (1990). From Frankl (1969) emerged the notion that the human spirit was the essential part of a person, and acted as a creative force to precipitate change and to integrate the social, psychological, and physical dimensions of a human being.

Roger's (1990) assumption that the human field extends beyond the physical aspects of the human being contributed to Reed's (1992) theory as well. An underlying assumption about the nature of human beings within Reed's (1992) theory was that the person and environment represented a process by which conflicts and challenges inherent to life were transformed into energy for change. This was in contrast to the mechanistic model where change in the human being was viewed as the result of the person reacting to stressors in the environment. A key element in the process of human developmental change was the capacity for self-transcendence. Self-transcendence was seen as empowering the individual for connectedness intrapersonally with oneself, interpersonally with others, and transpersonally to the unseen God or power greater than the self. Spirituality was manifested through these various patterns of connectedness.

The broad dimension of connectedness applied to both believers and nonbelievers to find meaning and purpose in life (Reed, 1992). A major assumption within Reed's (1992) theory was that spirituality is an ever-present part of human experience and thus, is integral to health. Health was defined in terms of a sense of wholeness or well-being, and not necessarily in terms of a cure of physical illness. The Religious Perspective Scale, the Spiritual Perspective Scale, the Self-Transcendence Scale and the Spiritual Well-Being Scale have been used to measure components of Reed's theory.

Younger (1995) presented a mid-range nursing theory of mastery over stress, which drew from the work of Sartre and Barner (1956) and Heidegger (1962). The theory explained the mechanisms through which suffering affected an individual's connectedness with self, God, and others. A continuum of relatedness existed from alienation, loneliness, existential aloneness, to connectedness.

Empirical Knowledge of Spirituality

Empirical knowledge of spirituality was derived from a vast amount of empiricist, phenomenological, and interpretive studies available in the literature. Analysis of the literature supported the identification of a sociological, a psychological, and a combined sociological/psychological approach to the concept of spirituality.

Identification of different approaches to spirituality contributed to understanding of health benefits in terms of prevention, improved health status, recovery from illness, or the enablement of people to cope with illness and adversity (Coyle, 2002). The sociological (Table 2), the psychological (Table 3) and the combined sociological/psychological (Table 4) approach as brought forth from the conceptual literature was

used to organize a review of the vast number of studies that examine the concept of spirituality.

sociological approach.

Table 2

Literature Review within the Sociological Dimension of Spirituality

Author/Year	Sample	Variables	Instruments	Major Findings
Kark, Shemi, Friedlander, Martin, Manor, & Blondheim/1996 American Journal of Public Health	16 year (1970-1985) historical prospective study in 11 religious and 11 matched secular kibbutzim in Israel; 3900 men and women 35 years and older	Determine association between Jewish religious observance and mortality among populations with maximal similarity in social structure, social support mechanisms, and lifestyle	Israel Central Bureau of Statistics	Mortality was considerably higher in secular kibbutzim; Lower mortality in religious kibbutzim was consistent for all major causes of death due to an environment that caused less stress and improved well-being
Strawbridge, Cohen, Shema, & Kaplan/1997 American Journal of Public Health	Longitudinal study followed 6928 persons aged 16-94 since 1965	Health and mortality Body mass index, social contacts, and health practices	Frequent attendance at religious (once a week or more) Health practices (smoking, exercise, alcohol, BMI) and social connections Social Network Index	Females, Blacks, those with impaired mobility and not depressed, were more likely to attend frequently Demonstrated lower mortality rates over 3 decades for frequent religious attenders compared with infrequent attenders even with adjustments for physical/mental health, social connections, and health practices

Author/Year	Sample	Variables	Instruments	Major Findings
Koenig, George, & Peterson/1998 American Journal of Psychiatry	Hospitalized medically ill aged 60 years and older N=94	Religious belief and activity on remission of depression Controlled for change in physical functioning and medical condition	CES-D Scale Diagnostic Interview Schedule (DIS) Religious Belief Scale Non-organizational religious activities (prayer, meditation, Bible study) Organizational religious activities (church/religious meetings/attendance) Duke Social Support Index Antidepressant use for treatment Severity of Illness Scale; Cumulative Illness Rating Scale	Religious belief predicted shorter time to remission Church attendance and private religious activities did not significantly predict faster resolution of depression
Koenig, Larson, Hays, McCullough, George, Branch, Meader, & Kuchibhatla/1998 Journal of Religion and Health	Medically ill, hospitalized male veterans N=1010 Ages 20-39 (16%) and 65-102 years (84%) admitted to general medicine and neurology	Religion and survival of hospitalized veterans	Religious affiliation, Religious Coping Index (RCI) Social interaction, size of social support, and satisfaction with support; Geriatric Depression Scale (GDS); Ability to perform ADLs Vital status	Neither religious affiliation nor religious coping predicted survival Major factors influencing mortality were older age, physical impairment, and diagnosis of cancer Marital status, education, income level, social support nor depression had any effect on survival

Author/Year	Sample	Variables	Instruments	Major Findings
Oman & Reed/1998 American Journal of Public Health	Community dwelling affluent elderly white population N=2025	Religion and mortality Religious attendance and subsequent mortality over 5 years Covariables-grouped into 6 categories: demographics, health status, physical functioning, health habits, social functioning and support, psychological state	Demographics, sex, age, marital status, income, education, employment, job type, residence in county and ethnic group Health status=chronic disease Physical functioning=observed 100 foot walk, chair stands and Rossiter-Fornoff scale Health habits=smoking alcohol consumption, sleeping, medications, body mass Social support and functioning=living alone, participation in activities Psychological CES-D subscales	Attendance at religious services predicted lower mortality in an affluent elderly White population Found no significant sex differences in the protective effect associated with religious attendance
Hummer, Rogers, Nam, & Ellison/1999 Demography	Demographic study over a nine year follow up period N=21,204	Religious involvement and U.S. adult mortality Demographic control variables were age, sex, race (Black and non-Black), region (South and non-South), health, health behavior, and social ties.	Religious attendance Socioeconomic measures: education and family income Health behavior=alcohol consumption and weight. Social ties=marital status, social activity with friends and relatives	Religious involvement is strongly associated with adult mortality Social ties and behavioral variables were mediating factors;

Author/Year	Sample	Variable	Instruments	Major Findings
Strawbridge, Shema, Cohen, & Kaplan/2001 Annals of Behavioral Medicine	Survey participants aged 17-65 years of age from a large, urban county N=2676	Religious attendance, increased survival through health behaviors, mental health, and social relationships	Weekly religious attendance Smoking, physical activity, alcohol consumption, medical checkups, depression, social interactions, and marital status Depressive symptom scale	Weekly religious attendance was associated with a statistically significant improvement in quitting smoking, becoming physically active, getting married, increased social relationships, & decreased depression
Contrada, Goyal, Cather, Rafalson, Idler, & Krause/2004 Health Psychology	Convenience sample ranged in age 32-88 mean 64.9 81% (115) men N=142	Religiousness and recovery from heart surgery Religiousness and other psychosocial factors: depressive symptoms, dispositional optimism, trait hostility, and social support	Belief in religious doctrine 5 item measure and religious behaviors: prayer, church attendance Beck Depression Inventory (BDI) Multidimensional Scale of Perceived Social Support Life Orientation Test Trait Hostility and Trait Anger subscales of Aggression Questionnaire	Those with stronger religious beliefs had fewer complications and shorter hospital stays Attendance at religious services was unrelated to complications but predicted longer hospitalization Suggests intrinsic/extrinsic religious orientations

Author/Year	Sample	Variables	Instruments	Major Findings
Harrison, Edwards, Koenig, Bosworth, Decastro, & Wood/ 2005	Cross-sectional study of African American outpatients with Sick Cell Disease	Examine 3 domains of religiosity (church attendance, prayer/Bible study, intrinsic religiosity) and pain	Duke Religious Index Short Form McGill Pain Questionnaire (SF-MPQ) Visual analogue scale (VAS) Psychological distress with the Symptom Check List-90 Marlow-Crowne Social Desirability Scale Disease Severity Index (developed for study)	Attending church was significantly associated with the lowest scores on pain measures Findings maintained after controlling for age, gender, and disease severity Prayer/Bible study and intrinsic religiosity were not significantly related to pain

The sociological approach to spirituality was reflected through attendance at religious services, religious affiliation/denomination, and private religious activities such as prayer and belief in religious doctrine. Synthesis of studies organized and evaluated within this approach support an inverse relationship between religious attendance and mortality. The relationship between frequent attendance at religious services (once a week or more) and lower mortality rates persisted when adjustments were made for potential confounding variables, such as age, gender, race, and disease severity. Attendance at religious services was unrelated to complications after heart surgery, but was significantly associated with lower pain scores for outpatients with Sick Cell Disease. The protective effect that was associated with religious attendance can be attributed to, or mediated by: a social environment that decreases stress and depressive symptoms; an increase in social relationships and interactions; social activities with friends and relatives; improved health behaviors regarding smoking, physical activity, alcohol

consumption and weight control.

Neither religious affiliation nor religious coping were related to mortality. Spirituality is a two dimension construct containing a religious, sociological dimension, and an existential, psychological dimension. Consequently, one may be religious and not spiritual, or one may be religious and spiritual. The sociological approach fused with religion, in and of itself, does not measure or define the essence of spirituality.

psychological approach.

The psychological approach to examining spirituality focuses on the key attributes of transcendence, connectedness, meaning of life, and purpose in life. The human capacity for transcendence was regarded as a developmental task to find meaning in life, and was defined as a level of awareness that exceeds ordinary, physical boundaries and limitations (Frankl, 1969; Reed, 1987). The attributes were viewed as empirical indicators of spirituality (Coyle, 2002; Reed, 1987). Instruments that reflect this approach include the Religious Perspective Scale, the Spiritual Perspective Scale, and the Self-Transcendence Scale. Table 3 presents published studies that have examined the concept of spirituality organized within the psychological approach.

Table 3

Literature Review within the Psychological Dimension of Spirituality

Author/Year	Sample	Variables	Instrument	Major Findings
Reed/1987 Research in Nursing and Health	3 groups of 100 adults matched on age, gender, education, and religious background 1.hospitalized terminally ill 2.hospitalized non terminally ill 3.healthy N=300	Spiritual perspective, Well-being, Developmental task of transcendence	Spiritual Perspective Scale (SPS)-saliency of spirituality Index of Well- Being (IWB)- Satisfaction with life	Terminally ill hospitalized adults indicate a greater spiritual perspective than non terminally ill or healthy adults Spiritual perspective is positively related to well-being among terminally ill hospitalized adults
Reed/1991 Nursing Research	Independently living 80-97 year olds N=55	Patterns of self- transcendence reported as important to emotional well- being Relationship between self- transcendence and mental health	Interviews	4 patterns of self- transcendence were identified 1.generativity 2.introjectivity 3.temporal integration 4.body transcendence
Coward/1996 Nursing Research	Convenience sample age 19-85 mean age 46 years healthy adults N=152 86%White, 72%female 52%Protestant 90%good to very good health 86% secure financial status	Self transcendence in a healthy population Relationships among self- transcendence, sense of coherence, hope, self- esteem, and cognitive and affective well- being	Self- Transcendence Scale (STS) Purpose in Life Test (PIL) Sense of Coherence Scale Rosenberg Self- Esteem Scale Greer & Burgess Self-Esteem Scale Herth Hope Index Affect Balance Scale (ABS), Profile of Mood Status (POMS), Cognitive Well- being Scale	Moderate correlations with self- transcendence ST and female gender, older age, and higher report of health status ST strongly correlated with sense of coherence, self- esteem, hope, and variables assessing emotional well- being

Author/Year	Sample	Variables	Instrument	Major Findings
Lindsey/1996 Journal of Advanced Nursing	Interpretive phenomenological study Participants had a variety of chronic illnesses N=8	Meaning of the experience of feeling healthy for people living with chronic illness	Interviews Focus group	Feeling healthy with chronic illness emerged through 6 themes honoring the self, connecting with others, creating opportunities, celebrating life, transcending self, acquiring a state of grace
McBride, Arthur. Brooks, & Pilkington/1998 Family Medicine	Stratified random sample recruited from a family practice residency clinic N=462	Relationship between overall health, physical pain, and intrinsic spirituality	Index of Core Spiritual Experiences (INSPIRIT) Dartmouth Primary Care Cooperative Charts measured overall health and pain	Found significant correlation between patient health and spirituality Significant differences also found in both overall health and pain based on 3 levels of spirituality
Chin-A-Loy & Fernsler/1998 Cancer Nursing	Convenience sample of men age 60 and older from 3 cancer support groups N=23	Self- transcendence as an adaptive coping mechanism and well-being	Self- transcendence Scale (STS) Demographics including health and activity status	No significant correlation between STS score, age, length of time living with prostate cancer and education were found High level of ST reported ST relevant to this population for adaptive coping

Author/Year	Sample	Variables	Instrument	Major Findings
Leidy & Haase/1999 Research in Nursing and Health	Purposive sample of outpatients with COPD ranging in age from 50-76 N=12 (6 men, 6 women)	Experience of finding purpose and meaning from daily activity	Interviews	Social factors influencing functional performance are better understood within the context of connectedness Declines in functional performance is a challenge to integrity Integrity=2 characteristics 1)effectiveness (being able) and 2)connectedness (being with)
Sowell, Moneyham, Hennessy, Guillory, Demi, & Seals/2000 Nursing Research	Longitudinal study with clinic based sample in Georgia of HIV infected women N=184	Spiritual activities as a resource to reduce the negative effects of disease-related stressors on adaptational outcomes and health IV-spiritual activities and HIV-related stressors DV-emotional distress and quality of life	Spiritual activities scale developed for study-defined as practices by which an individual expresses beliefs or connectedness to a Higher Power HIV related stressors, functional impairment, and work performance Short Form Health Survey (SF-36) HIV symptoms scale developed for study QOL-one item of SF-36	As spiritual activities increased, emotional distress decreased, even when adjustments were made for HIV stressors Spiritual activities are an important psychological resource Spiritual activities were significantly positively correlated with quality of life and negatively correlated with emotional distress

Author/Year	Sample	Variables	Instrument	Major Findings
Davis & Magilvy/2000 Journal of Nursing Scholarship	Descriptive ethnography with purposive sampling N=42 Economically depressed rural region of Colorado with high rates of poverty and unemployment Age range 60-94	Explore how chronic illness is experienced and managed by rural Hispanic and non-Hispanic older adults	Interviews	Analysis showed 5 interrelated themes 1.managing daily 2.support from faith and family 3.balance thru negotiation 4.self-care 5.belonging to community 6.finding meaning in life Living with chronic illness is community relationships and self transcendence
Fleury, Sedikides, & Lunsford/2001 Journal of Cardiovascular Nursing	Women who had experienced a cardiac event; age ranged from 42-78 years, majority were white N=14	Explored the role of the self in the experiences of women living with cardiovascular disease	Focus groups Interviews	Self-definition and meanings developed to face challenges of chronic illness Characterized by theme of connectedness with others 3 categories: seeking meaning, creating mastery, accepting self
Lyon & Younger/2001 Journal of Nursing Scholarship	Descriptive, correlational study using convenience sample recruited from urban infectious disease clinic in the Southeast USA N=123 80% men 64% African American 36% White Mean age- 37	Examine relationships among purpose in life, HIV disease severity, demographic variables, and depressive symptoms	Center for Epidemiological Studies Depression Scale (CES-D) Purpose in Life Scale (PIL) HIV severity- HIV RNA viral load, CD4 T-lymphocyte count, Revised HIV Medical Symptom Scale	Purpose in life was a stronger predictor of depressive symptoms than severity of HIV disease Strong inverse relationship of purpose in life to depressive symptoms

Author/Year	Sample	Variables	Instrument	Major Findings
Walton/2002 Dimensions of Critical Care Nursing	Phenomenological study with participants from a Midwestern tertiary care hospital diagnosed with acute myocardial infarction N=13 Age 41 to 79 9 men 4 women Caucasian	Spirituality: the meaning and the influence on recovery from acute myocardial infarction Discovering meaning and purpose	Interview	Discovering meaning and purpose is a major concept of spirituality Suggests 5 phases of discovering meaning and purpose 1. facing mortality 2. letting go of fear 3. life changes 4. seeking Gods purpose 5. finding meaning and purpose in daily life
Westlake, Dracup, Creaser, Livingston, Heywood, Huiskes, Fonarow, & Hamilton/2002 Issues in Cardiovascular Nursing	Descriptive, correlational study of patients being evaluated for heart transplantation N=61	Determine relationship of demographic characteristics, functional status, neuroticism, social network/ social support, spirituality and time since symptom onset with physical and mental components of HRQOL	Functional status measured by 6 minute walk Neuroticism-The Eysenck Personality Inventory Social network/support- Medical Outcomes Study Spiritual Perspective Scale (SPS) HRQOL Medical Outcomes Study (SF-36)	No significant relationship between social network/support, spirituality, and physical, or mental components of HRQOL Positive correlation between 6minute walk and neuroticism and the mental health component of HRQOL
Springer, Weaver, Linderblatt, Naditch, Newman, Siritsky, Flannelly, & VandeCreek/2003 The Journal of Pastoral Care and Counseling	Random sample of Jewish senior men and women living in New York City N=118	Spirituality, depression, and loneliness	Brief Depression Scale UCLA Loneliness Scale Index of Core Spiritual Experience- INSPiRiT	A statistically positive correlation was found between depression and loneliness scores Spirituality was not correlated with depression or loneliness

Author/Year	Sample	Variables	Instrument	Major Findings
Bickerstaff, Grasser, & McCabe/2003	Secondary analysis of large data set conducted in 6 long-term care facilities in 2 mid-western cities N=95	Identify qualities of nursing home residents that allow them to rise above (transcend) difficulties and to live with contentment and satisfaction	Content analysis of open ended questions of the interviews showing evidence of self-transcendence	Self-transcendent behaviors 1. feel valued 2. respond to needs of others 3. love 4. keep active 5. belief in higher power gives meaning to suffering
Bartlett, Piedmont, Bilderback, Matsumoto, & Bathon/2003	Participants were recruited from the Johns Hopkins Arthritis Center, diagnosed with rheumatoid arthritis N=77 Cohort was mostly female (81%), white (80%), and well-educated	Evaluate spirituality, well-being, and quality of life	Disease activity=joint count and duration of morning joint stiffness (minutes) Functional status-Medical Outcomes Study Short Form (SF-36) Spiritual Transcendence Scale (STS) CES-D Affect Balance Scale (ABS)	Spiritual transcendence varies among individuals with RA, is associated with happiness, joy, positive health perceptions; After controlling for disease activity, functional level, depression, and age, spiritual transcendence was associated with positive affect and enhanced self-ratings of health

From qualitative studies, spirituality emerged as a major theme for people living with chronic illness. Interrelated themes included connectedness (being with), self-transcendence, finding meaning and purpose in life, integrity, and self-care. Synthesis of quantitative studies organized and evaluated within the psychological approach indicated that: 1) spiritual perspective was positively related to psychological well-being; 2) self-transcendence was strongly correlated with sense of coherence, self-esteem,

positive affect, joy, happiness, and emotional well-being; 3) spiritual activities decreased emotional distress; 4) purpose in life was inversely related to depressive symptoms. Five studies examined the relationship between spirituality and overall health status.

Significant correlation between patient health and spirituality, and patient health and self-transcendence was reported. Spiritual activities were positively correlated with quality of life. Interestingly, no significant relationship between spirituality and physical or mental components of health related quality of life was reported for patients being evaluated for heart transplantation. It is important to note that patient perspectives and medical outcomes regarding quality of life may differ, especially if the patient is being evaluated for heart transplantation, and is fearful of not meeting eligibility criteria or of death.

The psychological essence of spirituality shaped the way patients perceived disease and suffering, thereby, influencing recovery, perception of health, and management of chronic illness. Reducing anxiety and depression freed up precious energy for performance of activities that contributed positively to the preservation of integrity and physical health.

combined sociological and psychological approach.

Spirituality as inner strength was examined within a body of literature that combines the sociological and psychological approach, and was documented as spiritual well-being. As conceptualized by Paloutzian and Ellison (1982), spiritual well-being can be described as the affirmation of life in relationship to a higher being, self, community, or environment, which nurtures the development of wholeness. The Spiritual Well-Being Scale developed by Ellison (1983) measures both approaches to spirituality. The scale

involves a religious vertical component and a psychological or existential horizontal component. The instrument is useful for assessing a patient's spiritual resources as a reservoir of strength in the face of adversity. It is especially sensitive to the lack of well-being (Ledbetter, Smith, Vosler-Hunter & Fisher, 1991). Published studies that have examined the concepts of spirituality organized within this approach are presented.

Table 4

Literature Review within the Combined Sociological and Psychological Dimension of Spirituality

Author/Year	Sample	Variables	Instruments	Major Findings
Kaczorowski/1989 Hospice Journal	114 adults with cancer	Anxiety Spiritual Well-Being	SWBS	Inverse relationship between anxiety and SWB Existential well- being correlated more negatively than religious well-being with anxiety
Landis/1996 Issues in Mental Health Nursing	Descriptive, correlational, multivariate N=94	Spiritual well- being, uncertainty, and psychosocial adjustment	SWBS	Negative significant relationship between both uncertainty & psychosocial adjustment and SWB Suggests that strengthening spiritual well- being, in particular existential well- being may reduce distress associated with illness

Author/Year	Sample	Variables	Instruments	Major Findings
Fernsler, Klemm, & Miller/1999	Descriptive correlational study of participants with colorectal cancer N=121	Identify relationship between subjects spiritual well-being and demands of illness	Demands of Illness inventory (DOI) SWBS	DOI > among men, the youngest subjects, those treated in last 2 months, subjects with decreased activity, metastatic disease, and terminal status Subjects reporting higher SWB indicated significantly lower DOI related to physical symptoms, monitoring symptoms, and treatment issues > SWB in women
Potter & Zauszniewski/2000	Correlational, cross-sectional study Convenience sample of older adults >60, recruited from a rheumatology office and rehab outpatient department in rural New England N=47	Examined combined effects of the social, emotional, and physical impact of arthritis and additive or mediating effects of learned resourcefulness and spirituality on general health perception	Arthritis Impact Measurement Scale (AIMS2) Spiritual Well-Being Scale (SWBS) Rosenbaum's Self Control Schedule (SCS)	Social, emotional, and physical impact of arthritis together predicted health perception Spirituality and health perception were significantly correlated Learned resourcefulness highly correlated with spirituality indicating there may be an interactive effect between individual's spirit and mind Social impact of rheumatoid arthritis was a significant, independent predictor for spirituality

Author/Year	Sample	Variables	Instruments	Major Findings
Tuck, McCain, & Elswick/2001 Journal of Advanced Nursing	Descriptive, correlational study of males living with HIV disease N=52	Examine relationships among spirituality and psychosocial factors, and to determine the most reliable spirituality measure for a proposed longitudinal study	SPS, SWBS, Spiritual Health Inventory Uncertainty in illness scale, dealing with illness scale, social provisions scale, impact of events scale, functional assessment of HIV	EWB of SWBS positively related to quality of life, social support, effective coping Negatively related to perceived stress, uncertainty, psychological distress, and emotional-focused coping Spiritual measure that best captures these relationships is the EWB subscale of the SWBS
Beery, Baas, Fowler, & Allen/2002 Journal of Holistic Nursing	Participants with congestive heart failure being treated medically or by transplant	Examines the role spirituality plays in the quality of life for study participants	Medical Outcome Survey Short Form 36 (SF-36) Index of Well-Being Scale Spiritual Well-Being Scale Relative Importance Scale	Combined spirituality scores predicted 24% of the variance in global quality of life No significant gender differences in spiritual well-being or quality of life
Walton/2002 Nephrology Nursing Journal	Sample included 11 patients, 4 men and 7 women, ages 36-78 years, from a rural northwestern US, hospital based out-patient hemodialysis unit	What does spirituality mean and how does spirituality influence the lives of hemodialysis patients	Interview Focus group with dialysis staff met to critique the study for clarity, understanding, and clinical application, with recommendations for clinical practice	Central core category was finding a balance which occurred in 4 phases 1. confronting mortality 2. reframing 3. adjusting to dialysis 4. facing the challenge Categories of spirituality were 1. faith 2. presence 3. receiving and giving back

Author/Year	Sample	Variables	Instruments	Major Findings
Tate & Forchheimer/2002 Physical Medicine and Rehabilitation	Cross-sectional study of 2 groups: rehabilitation (N=136) recurrent cancer (N=72) 5 diagnostic groups for amputations, polio, injury, breast cancer and prostate cancer	Determine what factors related to QOL, life satisfaction, and spirituality among these patients Older, married, and working subjects reported higher QOL, life satisfaction, and spirituality	Health Status Questionnaire Medical Outcomes Study Short Form (SF-36) Functional Living Index-Cancer (FLIC) Functional Assessment of Cancer Therapy-General (FACT-SP) Satisfaction with Life Scale (SWLS) Functional Assessment of Cancer Therapy-Spiritual (FACT-SP)	QOL can best be explained by one's emotional, functional, physical and social well-being Life satisfaction was influenced more by one's spiritual well-being and marital status Spirituality was an independent predictor of life satisfaction for rehab patients, not recurrent cancer patients
Popkess-Vawter, Yoder, & Gajewski/2005 Clinical Nursing Research	Descriptive study with patients from a weight management clinical practice N=34	Spirituality assessment, spiritual well-being, self-esteem and quality of life	Spirituality Assessment Scale Spiritual Well-Being Scale Quality of Life Short Form 12	Spiritual well-being was significantly related to self-esteem and quality of life

Synthesis of studies organized and evaluated within the combined approach, indicated that: 1) spiritual well-being was inversely related to anxiety, perceived stress, uncertainty, and psychosocial adjustment; 2) spiritual well-being influenced life satisfaction and was significantly positively related to quality of life; 3) spirituality and health perception were significantly correlated; 4) learned resourcefulness was highly correlated with spirituality. Spirituality can be a unifying force that integrates social, emotional, and physical dimensions of health. The findings suggest that there was a correlation between the social and emotional impact of disease, and a correlation between

the emotional and physical impact, but no correlation between the social and physical. Consequently, the combined approach based on spiritual well-being to examine the influence of spirituality on perception of health and quality of life is important. Synthesis of studies organized and evaluated within the three approaches to spirituality (sociological, psychological and combined sociological/psychological) suggested that: 1) the sociological approach was related to decreased mortality, 2) the psychological approach was related to managing suffering and meaning in life, and 3) the combined approach was related to attaining the perception of health and quality of life.

Pathways exist to help explain why spirituality could influence physical as well as mental health. Sympathetic and parasympathetic nerve tracks connect thoughts and emotions in the brain to the circulatory system, coronary arteries, lymph nodes, bone marrow, and spleen (Rabin, 1999). If spirituality results in less anxiety and depression and greater social support, then stress-related physiological changes that impair healing may be counteracted (Rabin, 1999). The relationship between health outcomes and spiritual well-being has not been studied among persons with osteoarthritis. A study theoretically guided by the Revised Symptom Management Model presented by Dodd et al. (2001), and designed to measure relationships among symptom experience, symptom self management strategies, and symptom outcomes for those suffering from osteoarthritis is warranted. Use of the spiritual well-being scale to investigate these relationships would add to the knowledge surrounding the concept of spirituality in several important ways: it would provide additional empirical data for the Revised Symptom Management Model to include this population; it would demonstrate continued

support to clarify the definition of spirituality; and, it would support the conceptual notion of a sociological and psychological approach to spirituality.

Osteoarthritis

Arthritis has been the most prevalent age related chronic condition, and a leading cause of disability (Ethgen & Reginster, 2004). Osteoarthritis is the single most common cause of disability in older adults (Peat, McCarney, & Croft, 2001). Concern surrounding future arthritis prevalence is intensified when looking at demographics regarding the aging population. A longer life span is now one of the greater challenges for the current century since ensuring the health and well-being for an unprecedented number of elderly people will be necessary. Modern societies should be willing to ensure that the elderly have every opportunity to remain active and productive (Ethgen & Reginster, 2004). The significance of the burden of arthritis on society remains under appreciated and is a neglected health priority. There are two primary reasons for this neglect: arthritis is incorrectly viewed as a normal part of the aging process, and numerous patients believe that nothing can be done for their arthritis (Ethgen & Reginster, 2004). There are a variety of systemic risk factors accounting for a predisposition to symptomatic osteoarthritis. The risk factors include genetics, diet, bone density, muscle strength, body weight, joint injury, depression, and stress (Meisler, 2002; Okma-Keulen & Hopman-Rock, 2001; Sandmark, Hogstedt, Lewold, & Vingard, 1999; Spector, Cicuttini, Baker, Loughlin, & Hart, 1996).

Diagnosis

Although osteoarthritis is an active degenerative joint disease process that involves

structural changes to the articular cartilage and the subchondral bone, the initial etiologic event remains unknown. Osteoarthritis develops when excessive loading of the joint causes the tissue to fail, and when the properties of the cartilage or bone are inferior (Vallerand, 2003). Radiographic appearance of the pathological processes has traditionally been the cornerstone of diagnosis, but current primary care guidelines regard x-rays as non-essential for diagnosis and management (Peat et al., 2001). Guidelines published by the American College of Rheumatology provide for the classification of osteoarthritis as a clinical syndrome in older adults who present with pain, morning stiffness, and joint crepitus (Hochberg et al., 1995a, 1995b). Pain and disability are the main presenting features as noted by Peat et al. (2001), which supports the classification of osteoarthritis as a clinical syndrome.

Population survey findings, additionally, support that a distinction be made between radiographic and clinical case definitions of osteoarthritis. Two survey findings, presented by McAlindon, Snow, Cooper, & Dieppe (1992), reported that 50% of subjects with radiographic osteoarthritis do not have pain; secondly 50% of subjects who complain of pain have no definite radiographic evidence of osteoarthritis. In a Canadian study reported by Mazzucca et al., (1997), 25% of patients being managed with knee osteoarthritis had normal radiographs. At present, there is no evidence on how the label of osteoarthritis is assigned in practice (Peat et al. 2001). Since x-rays may appear normal in early stages of the disease, accurately diagnosing osteoarthritis depends on clinical evaluation of the patient history, careful physical examination, and x-rays, only to

support the diagnosis or to exclude other possible causes of the symptoms (Vallerand, 2003; Meisler, 2002).

Diagnosis of osteoarthritis for this study relied on guidelines published by the American College of Rheumatology that provide for the classification of osteoarthritis as a clinical syndrome in older adults who present with pain, morning stiffness, and joint crepitus. Consequently, x-rays were not essential for diagnosis.

Treatment Aims

Treatment of osteoarthritis aims at 1) educating the patient about osteoarthritis, 2) alleviating pain, 3) optimizing and maintaining function, and 4) preventing or retarding progression of adverse structural changes that affect the joint cartilage, bone, ligament and muscle. Pain, a cardinal symptom of osteoarthritis, can significantly reduce functional ability. Chronic, nonmalignant pain like that of osteoarthritis is characteristically resistant to treatment, with only about 50% of patients reporting adequate relief (Howell, 1994). Current treatments include non-pharmacological, pharmacological, and surgical modalities. Evidence to support the effectiveness of individual treatments is variable (Pendleton et al., 2000).

non-pharmacologic management.

There has been a vast amount of research conducted evaluating non-pharmacologic treatment of knee osteoarthritis and of generalized osteoarthritis. The primary treatments included within this category for management of knee osteoarthritis are education, regular exercise, appliances (sticks, insoles), and weight reduction (Pendleton et al.,

2000; Vallerand, 2003; Denoeud, Mazieres, Payen-Champenois, & Ravaud, 2005; Mazieres et al., 2005).

The meta-analysis reported by Superio-Cabuslay, Ward, and Lorig (1996), showed benefits from different educational techniques in reducing pain and increasing coping skills, but indicated little impact on function in patients with knee osteoarthritis. Educational techniques shown to be effective included individualized education packages (Mazzuca et al., 1997), patient coping skills (Keefe et al., 1990), and spouse-assisted coping skills training (Keefe et al., 1996; Martire et al., 2003). Similar results showing that educational techniques reduce pain and increase coping skills of patients with generalized osteoarthritis are reported, as well (Zeb, 1998; Weinberger, 1998; Hirano, Laurent, & Lorig, 1994). Consequently, there is good evidence that educational techniques reduce pain for both knee and generalized osteoarthritis.

At first glance, osteoarthritis literature regarding exercise intervention seems daunting until one understands, and is able to organize the activities studied. Exercise can be separated into joint-specific strength, range of motion exercises, and general aerobic conditioning (Pendleton et al., 2000). There is evidence from large randomized controlled trials that joint-specific strength (O'Reilly, Muir, & Doherty, 1999; Van Baar et al., 2001), range of motion, and aerobic exercise regimens (Deyle et al., 2000) reduce pain and improve function in patients with knee and generalized osteoarthritis. Consequently, there is good evidence that education and exercise regimens for both knee and generalized osteoarthritis reduce pain, and that exercise regimens also improve function.

Exercise and weight reduction, thermal techniques, acupuncture, and electrotherapy, were reported by others (Guerrero, Hahn, & Fang, 1998; Vallerand, 2003) to also be effective in the treatment of pain and functional loss for generalized osteoarthritis.

Weight reduction, diet, acupuncture, and the use of appliances seem sensible, but are supported by minimal evidence at present (Pendleton et al., 2000; Vallerand, 2003; Manninen, Riihimaki, Heliovaara, & Suomalainen, 2004; Lievense et al., 2002).

Important to the body of research evaluating treatment interventions is the examination of symptom management over time. Weigl, Angst, Stucki, Lehmann, and Aeschlimann (2004) present research that evaluates most of these techniques in a prospective cohort study with assessments over a period of two years. Their research examined the course of pain, physical function, and domains of mental health after a comprehensive inpatient rehabilitation intervention in patients with generalized osteoarthritis over time with assessments at 3, 6, 9, 12, and 24 months after baseline. The comprehensive intervention over 3-4 weeks, consisted of individualized strengthening exercise, flexibility training, endurance training, hydrotherapy, swimming, thermal therapy, patient education, massage, and electrotherapy. Both pain and physical function improved until discharge. The effect in pain reduction remained significant by 24 months, whereas the physical function deteriorated close to baseline values after 12 months. Significant effects at the end of the rehabilitation intervention on the SF-36 scales for vitality, social functioning, and mental health, disappeared at the 3 month follow-up.

pharmacologic management.

The guidelines of the American Geriatric Society (1998), the American Pain Society

(2002), and the American College of Rheumatology (Hochberg et al., 1995a, 1995b) recommend that paracetamol (acetaminophen), at doses up to 4000 mg/day, should be the first-line agent for relieving pain. Zhang, Jones, and Doherty (2004) assessed the efficacy of paracetamol (acetaminophen) in the treatment of osteoarthritis through a meta-analysis of randomized controlled trials. Review of 10 randomized controlled trials for patients with generalized osteoarthritis confirmed that paracetamol is an effective agent for pain relief from osteoarthritis. The effect size was small 0.21, but statistically significant for analgesia alone, although not for overall outcomes such as joint stiffness or function (Zhang et al.).

Aspirin and other nonsteroidal anti-inflammatory drugs (NSAIDs) should be used when acetaminophen is not effective (Pahor et al., 1999; Vallerand, 2003; Zhang et al., 2004). NSAIDs provide antipyretic, analgesic, and anti-inflammatory actions. The primary mechanism of action is the inhibition of the prostaglandin production at the cyclooxygenase (COX) enzyme. There are two isoforms of COX: COX-1 and COX-2. Although there is good evidence for the efficacy of NSAIDs, both oral and topical, for the management of osteoarthritis, the drugs are associated with gastrointestinal toxicity, renal failure, risk of stroke and congestive heart failure, and may not be appropriate for frail, older adults (Vallerand, 2003). Several COX-2 selective NSAIDs have been withdrawn from the market as a result of the significant toxicity.

Hyaluronic acid and other Symptomatic Slow Acting Drugs for Osteoarthritis (SYSADOA), such as chondroitin sulphate, glucosamine sulphate, or diacerein, may possess structure modification properties and be used as supplemental treatment. The use

of SYSADOA in the management of osteoarthritis varies widely. Literature review by Pendleton et al., (2000) reveals several studies that have assessed each product individually for its role in pain reduction, functional improvement, and disease modification. There is evidence to support the efficacy of hyaluronic acid for pain reduction over several months and functional improvement; however, the benefit may be offset by slower action, the number of injections required, and the cost. There is no evidence for disease modification. The term SYSADOA covers a range of additional agents, and although there is some evidence to support the use of glucosamine sulphate and chondroitin sulphate, the evidence for others is weak (Pendleton, et al.).

Intra-articular injection of long acting steroid is indicated next within the algorithm for osteoarthritis pain management developed by the American Pain Society (2002). The effects of steroid injection have been assessed in a number of studies. There is evidence that intra-articular steroids are efficacious, but the benefit may be short lived. The evidence remains unclear as to the presence of effusions as a predictor of response (Pendleton, et al., 2000). The American Geriatric Society (1998) and the Pain Society (2002) guidelines suggest that the next line of treatment that may be helpful for controlling pain is the use of opioid analgesics. Lower doses are advisable since renal clearance of these drugs decreases with aging. However, recommendation for age adjusted dosing is not available (Pahor, et al., 1999).

surgical management.

There is strong clinical agreement that patient's, severely incapacitated by osteoarthritis, can have improved physical function and pain relief with joint

replacement surgery (Nilsson, Aurell, Siosteen, Lohmander, & Roos, 2001; Nilsson & Lohmander, 2002; Nilsson, Petersson, Roos, & Lohmander, 2003; Pendleton, et al., 2000). The surgical techniques of joint replacement have improved continuously, diminishing the risks associated with the operation. Although difficulties with study design may limit randomized studies on surgical treatments, there are areas that should be examined including differences in surgical techniques or joint prosthesis on long term outcomes (Pendleton, et al.). Over the last decade, studies examining predictors of patient outcomes relevant to joint replacement surgery have increased. Despite numerous predictors, such as age, sex, radiographic stage, and surgical wait time, results consistently support the outcome of increased function, although it may take one year post-operatively to gain the full benefit (Coyte, Hawker, Croxford, & Wright, 1999; Nilsson et al. 2001; Nilsson & Lohmander, 2002; Nilsson et al., 2003).

treatment effectiveness with management of symptoms.

There is a wide range of current treatment options for osteoarthritis, and the evidence supporting the effectiveness of individual treatments is variable. Optimal management of osteoarthritis requires a combination of pharmacological and non-pharmacological treatment modalities (Pendleton, et al., 2000). The management plan also needs to take into account holistic factors, such as patient attitudes and knowledge, comorbidity, sleep patterns, treatment availability, relative benefit and potential dangers, costs, pain severity, activity, and assessment of depression (Denoeud et al., 2005; Pendleton, et al., 2000).

Despite the variety of treatment interventions, the number of people who suffer

from severe osteoarticular pain remains exceedingly high (Pahor, et al., 1999), with only about 50% of patients reporting adequate relief (Howell, 1994). Osteoarticular pain (Dickson & Kim, 2003) frequently affects physical function (Lamb, et al., 2000; Martire, et al., 2003; Pendleton, et al., 2000), and is associated with physical disability (Peat et al., 2001), depression (Martire, et al., 2003; Ethgen & Reginster, 2004), decreased socialization (Nilsdotter & Lohmander, 2002), sleep disturbances, diminished well-being, decreased quality of life (Gerstle, All, & Wallace, 2001; Ethgen & Reginster, 2004), and increased health care costs (Pahor, et al., 1999).

As traditional medical approaches are not fully able to address human pain and disability, such as that experienced with osteoarthritis, there has been a recent resurgence of interest in non-traditional sources of healing and holistic medical practice. As interest in alternative and complementary medicine has grown, the notion of linking spirituality with nursing interventions has become widely popular. It is important to increase knowledge of the possibilities for intervention at each level (prevention, therapeutics, and education) to control symptoms, postpone disability, and give patients with osteoarthritis the ability to manage symptoms daily (Ethgen & Reginster, 2004).

Treatment suggestions by healthcare providers fail to effectively reduce the pain of osteoarthritis, and patients begin searching for self-care solutions to ameliorate the frequency and intensity of their pain. Understanding the self-care strategies that patients use to manage their symptoms is critical for health care providers to assist patients in maintaining function and quality of life. Spirituality has been demonstrated to be a helpful adjunct in the management of disease, and in helping individuals attain positive

health perceptions (Potter & Zauszniewski, 2000) and quality of life (Beery et al., 2002; Tuck et al., 2001; Popkess-Vawter et al., 2005; Tate & Forchheimer, 2002). Attention to the relationship between spirituality, health, and self-management of illness is important for nurses to provide culturally competent care (Polzer & Miles, 2005).

Chapter 3

Methods and Procedures

This chapter details the research design, method, and procedures that were used in this study. The sample, instruments, data collection procedure, and data analysis plan for the study will be discussed.

Research Design

A quantitative approach to a descriptive, theory based, correlational design was utilized to examine the relationship between one independent variable (spiritual well-being), three symptom experience dependent variables (pain, stiffness, and function) and one symptom outcome dependent variable (quality of life) among osteoarthritis clients. A descriptive correlational design was defined as a study conducted in a natural setting without any attempt to modify, control, or introduce something new to the environment (Kerlinger, 1986). Correlational techniques were appropriate for use in this exploratory study, when there is no treatment, and the primary purpose is to determine whether relationships exist between the independent and dependent variables in a single group of patients with osteoarthritis (Munro, 2001). A correlational study simply observes the size and direction of a relationship among variables, and many commentators doubt the potential of such designs to support causal inferences in most cases (Shadish, Cook, & Campbell, 2002).

Sample

Osteoarthritis is a common disabling disease, the prevalence of which increases with

age. The sample, therefore, included adult clients over the age of 50, diagnosed clinically and/or radiographically with osteoarthritis.

Sample Size

The necessary sample size for this study was determined by designating the expected effect size, the desired power, and an acceptable significance level (alpha) (Munro, 2001). Effect size is the measure of the magnitude of a relationship (Shadish, Cook, & Campbell, 2002). Effect size can be small (.10), medium (.30), or large (.50), and is selected based on the following: (a) past work, (b) conventional value and/or (c) the minimum value required for theoretical significance (Cohen, 1988). Power is the probability of correctly rejecting a false null hypothesis, usually interpreted as finding an effect when an effect exists (Shadish et al.). According to Cohen (1988), power values are chosen from the range of .70 to .90. An alpha set at the significance level of .05 is the customary level for rejection of the null hypothesis (Potter & Zauszniewski, 2000).

The conventional sample size tables were used to determine the sample size for this study. For this study, the alpha was set at .05, with desired power of .80 and effect size of .30. A medium effect size was chosen because in the analysis of behavioral science data, it has been found that this magnitude and degree of relationship is perceptible to the observer (Cohen, 1988). Using these parameters a sample size of 68 is needed for a correlational study based on a one-tailed level of significance.

Sites for Recruitment of Subjects

Once approval to conduct the study was obtained from the investigator's dissertation committee and the University of San Diego Institutional Review Board (Appendix A)

a sample of 68 participants was recruited through a variety of non-probability sampling techniques. All attempts were made to obtain as heterogeneous a sample as possible. In order to accrue a sufficient pool of subjects for this study, the following methods were used by the researcher to recruit potential participants: (a) contacted representatives of the Arthritis Foundation Programs in North San Diego County, physician offices, pharmacies, senior centers, retirement communities, and clinics in San Diego County to introduce the healthcare providers to the study, (b) sent letters (Appendix B) containing basic information about the research to the program representative and healthcare providers, and (c) posted a recruitment flier (Appendix C), describing the research study, welcoming participants, and providing researcher contact information in these locations of high visibility for individuals with osteoarthritis of the hip or knee. The rationale for selection of these sites was the accessibility to potential subjects. Recruitment outcomes are summarized in Table 5. No participants were recruited from pharmacies or community clinics.

Table 5

Recruitment Outcome Summary

Recruitment Site	n	%
Arthritis Foundation Programs	3	4.4
Physician Offices	8	11.8
Pharmacies	0	0
Senior Centers	35	51.5
Retirement Communities	5	7.3
Clinics	0	0
Participant Referral	17	25

A difficult criterion to satisfy through the research design is external validity, which

means generalizability. When a study has been completed and a relationship found, generalizability addresses the ability of the findings to be applied to other subjects than the cohort studied. It is based on the capacity to transfer knowledge from research findings to a similar representative population. Generalizability of the research findings to the population at large was a consideration in establishing the research design. Inclusion of different community sites and patients from racial and ethnic minority groups, sampling method variation, selection criteria that is not subjective, systematic documentation of illness severity, and relevant inclusion and exclusion characteristics set the limits on generalizability of study findings (Kerlinger, 1986). In an effort to enhance generalizability in this non-experimental study the design incorporated the following: (a) a cross sectional sample population in terms of age and disease process, (b) the selection of participants from multiple sites, and (c) relevant inclusion characteristics.

Recruitment Protocol

Recruitment to participate in the study began with verbal contact and was followed by a written letter to healthcare providers in San Diego County. The purpose of the contact and letter was to identify the nurse researcher, the purpose of the study, and the researchers recruitment efforts. After permission was granted from healthcare providers regarding the researchers recruitment efforts, fliers were distributed and posted for visibility to potential participants for the study. When subjects contacted the researcher, questions and concerns about the study were addressed, and a convenient location for the interview was arranged for those individuals that agreed, and were qualified to participate in the research.

Criteria for Subject Selection

Volunteers over 50 years of age and diagnosed with osteoarthritis, were invited to participate in the study at a prearranged, conveniently located meeting place for the participant. Informed consent (Appendix D) was obtained by the researcher prior to data collection. The participants were assured that personal information would remain anonymous, that participation was strictly voluntary, and that they may withdraw from the study at any time.

The diagnosis of osteoarthritis was based on the American College of Rheumatology criteria for osteoarthritis of the hip or knee (Altman et al., 1991; Altman et al., 1986). Inclusion criteria for diagnosing knee osteoarthritis was classified as a clinical diagnosis with presenting (a) knee pain for more than 25 of the past 30 days; (b) morning stiffness of less than 30 minutes; and (c) crepitation in the knee; and/or a radiographic diagnosis when there is (a) knee pain for more than 25 of the past 30 days and (b) osteophytes on x ray examination of the knees. Patients with hip osteoarthritis were included when there was (a) hip pain for more than 25 of the past 30 days and/or (b) at least two of the following three criteria: (1) erythrocyte sedimentation rate $<20\text{mm}/1\text{st h}$; (2) osteophytes on x-ray examination; or (3) obliteration of joint space (Altman et al., 1991; Altman et al., 1986). The clinical diagnosis criteria for osteoarthritis of the knee and hip was the inclusion criteria used for the majority of subjects. Other inclusion criteria for the sample were as follows: (a) volunteer adults over the age of 50, (b) individuals able to speak, read, and understand English, and (c) subjects with the absence of severe depressive symptoms as was assessed by means of the Geriatric Depression Scale score of >19 .

Instruments

The demographic profile questionnaire (Appendix E), the Geriatric Depression Scale (GDS) (Appendix F), the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) (Appendix G), the Spiritual Well-Being Scale (SWBS) (Appendix H), the Spiritual Practices Profile (SPP) developed for the research (Appendix I), and the Missoula-Vitas Quality of Life Index (Appendix J) instruments were completed with each individual in the study. An identification number was assigned to each participant to assure anonymity.

Demographic Profile Questionnaire

The demographic profile questionnaire information enabled the researcher to compare results of this study to the existing literature. The questionnaire was designed to collect the following data: interview date, gender, age, marital status, length of time in years since diagnosed with osteoarthritis, joint affected, type of treatment, alternative therapies, date of last treatment, type of last treatment, ethnic background, religious affiliation, adequate financial resources to manage healthcare concerns, occupation, employment status, and highest level of education.

Geriatric Depression Scale (GDS)

While there are many instruments available to screen for depression, the Geriatric Depression Scale (GDS), first created by Yesavage et al (1983), has been used extensively with the older population. It is a brief questionnaire that took 5 to 10 minutes to administer, in which participants were asked to respond yes or no to 30 questions. The investigator circled the answers according to the subject's response.

Of the 30 questions, 20 questions indicated the presence of depression when answered positively, while ten others (numbers 1, 5, 7, 9, 15, 19, 21, 27, 29, and 30) indicated depression when answered negatively. Each question was scored as 0 or 1 based on the positive or negative answer and the number of the question. The questions are ordered within the instrument so as to maximize patient acceptance of the questionnaire. The instrument included a score of one (1) adjacent to the appropriate yes or no response for the ease and accuracy of scoring. The questions were not shown to the participant. Scores of 0-9 were considered normal, 10-19 indicated mild depression, and 20-30 indicated severe depression (Yesavage et al.).

For the validation phase of the development of the GDS, two groups of elderly subjects were recruited. The first group consisted of community dwelling elderly persons with no history of mental illness, and the second group were subjects under treatment for clinical depression. Cronbach's alpha was utilized to provide an overall measure of internal consistency of the GDS. The computed value of alpha was 0.94, suggesting a high degree of internal consistency. The (GDS) was found to have a 92% sensitivity and an 89% specificity when evaluated against diagnostic criteria. The validity and reliability of the tool have been supported through research and clinical practice with the elderly (Yesavage et al., 1983). More than 10 years after the scale was introduced to the scientific community, Montorio and Izal (1996) summarized findings from validation studies that tested this instrument, concluding that the (GDS) is a relevant self-report measure for the assessment of depression in the elderly, with utility in detecting depression and adequate psychometric properties.

Western Ontario and McMaster Universities Osteoarthritis Index

The Western Ontario and McMaster Universities Index (WOMAC), was developed as an osteoarthritis specific, multidimensional, health status instrument to assess pain, stiffness, and limitations in physical function during activities of daily living in patients with osteoarthritis of the hip or knee (Bellamy, Buchanan, Goldsmith, Campbell, & Stitt, 1988). The WOMAC was used in this study to operationalize the symptom experience concept within the Revised Symptom Management Conceptual Model (Dodd et al., 2001). Pain (5 items), stiffness (2 items), and physical functional ability (17 items) were the categories measured by the 24-item instrument, which took 5 to 10 minutes to complete. The index assessed the severity of pain during 5 activities, and the severity of impairment of lower-extremity function during 17 activities. All 24 WOMAC items were recorded on a categorical scale of none (0), slight (1), moderate (2), severe (3), or extreme (4). Each category was assigned a numeric score of 0 to 4. The range, therefore, on the pain scale was 0 to 20, the range on the stiffness scale was 0 to 8, and the range on the functional scale was 0 to 68 (68=greatest functional limitation) (Bellamy et al.). Summation of the 24 component item scores provided a single value (Total WOMAC Score), weighted according to differential scale lengths (ratio=5:2:17). The higher total score reflected a greater decline in health status.

Fifty-seven patients with symptomatic osteoarthritis of the hip or knee requiring non-steroidal anti-inflammatory medications were entered into the validation phase for the WOMAC instrument. Within the context of a double blind, randomized, controlled parallel trial of 2 non-steroidal anti-inflammatory medications the instrument was validated. The pain, stiffness, and physical subscales fulfill conventional criteria for face content, and construct validity, and reliability. Internal consistency of the scale was

supported using Cronbach's alpha ranging from 0.89 to 0.96, and 10-day test-retest reliability ranges from 0.71-0.90 for the scales. Validity has been demonstrated by significant correlations with radiological osteoarthritis severity and range of motion, and the instrument has been shown to be responsive to change over time (Bellamy et al., 1988). Research completed by Deyle et al., (2000) indicated that this index continues to be a reliable, valid, and responsive multidimensional outcome measure for evaluation of patients with osteoarthritis of the knee or hip.

Spiritual Well-Being Scale (SWBS)

The Spiritual Well-Being Scale was constructed to measure the spiritual dimension and the quality of one's spiritual health, due to the lack of any systematic, subjective, quality of life measure that included both religious and existential spiritual well-being (Paloutzian & Ellison, 1982). Ellison (1983) suggested that it is the spirit of human beings (spirituality) which synthesizes the total personality and provides direction and order. The spiritual dimension does not exist in isolation from the psychological and physical dimension of human beings. The SWBS is a general indicator of personality integration, and a resultant measure of health and well-being (Ellison & Smith, 1991). It was used in this study to measure the participant's spiritual well-being resources.

The scale consisted of 20 items, with equal distribution of 10 items for each of two subscales: religious well-being and existential well-being (Ellison & Smith, 1991). Odd numbered items assessed religious well-being, while even numbered items assessed existential well-being. Each item was answered on a six point Likert scale ranging from strongly agree to strongly disagree, with higher scores indicating a greater degree of spiritual well-being (Fernsler, Klemm, & Miller, 1999). Items are scored from 1 to 6.

The positively worded items are numbers 3, 4, 7, 8, 10, 11, 14, 15, 17, 19, and 20. For these items an answer of strongly agree was given a score of six, and strongly disagree was given a score of one. Scores of 2, 3, 4, 5, were assigned to responses of moderately agree, agree, disagree, moderately disagree respectively for positively worded items.

About half of the items are worded negatively in an attempt to reduce the effect of respondent set. Reverse scoring from 6 to 1 was used for negatively worded items.

There are three primary scores that can be obtained from the Spiritual Well-Being Scale: a total well-being score (SWB), a summed score for religious well-being (RWB), and a summed score for existential well-being (EWB). The sum of scores for all items was the total spiritual well-being score (SWB), ranging from 20-120. A score of 20-40 indicated low spiritual well-being, 41-99 was moderate well-being, while a score of 100-120 represented high spiritual well-being.

The Religious Well-Being Subscale Score (RWB) reflected a sense of satisfaction and positive connection with God. The sum of scores for the odd numbered items 1, 3, 5, 7, 9, 11, 13, 15, 17, and 19 represented the score for religious well-being. A higher score indicated a very positive view regarding the participant's relationship with God. The second subscale, the Existential Well-Being Score (EWB) measured the level of life satisfaction and life purpose. The sum of scores for the even numbered items 2, 4, 6, 8, 10, 12, 14, 16, 18, and 20 provided the score for existential well-being. A higher score, in the range of 50-60, indicated a high level of satisfaction with life and a clear sense of purpose. For both the RWB and the EWB, a low score ranged between 10-20, and a moderate score fell between the range of 21-49.

The SWBS has been used extensively in research and has been tested with samples including college students (Carson, Soeken, & Grimm, 1988), patients managing weight (Popkess-Vawter, Yoder, & Gajewski, 2005), patients adjusting to end stage renal disease (Tanyi, & Werner, 2003), diabetes (Landis, 1996), multiple sclerosis (McNulty, Livneh, & Wilson, 2004), HIV (Tuck, McCain, & Elswick, 2001; Carson, Soeken, Shanty, & Terry, 1990) and colorectal cancer (Fernsler et al., 1999). Cronbach's alpha coefficients reflecting internal consistency were 0.89 (SWB), 0.87 (RWB), and 0.78 (EWB). The test-retest reliability coefficients were 0.93 (SWB), 0.96 (RWB), and 0.86 (EWB). These were consistent with high reliability and internal consistency (Paloutzian & Ellison, 1982). Construct validity was supported by the scale's positive correlation with measures of well-being and negative correlation with indicators of ill health (Bufford, Paloutzian, & Ellison, 1991). Despite its extensive use, there are no reported normative values. Ledbetter, Smith, Vosler-Hunter & Fischer, (1991) evaluated 17 religious and non-religious SWBS samples for the presence of ceiling effects. The results indicated that previously reported relationships between the SWBS and other variables are underestimated for religious samples.

Despite the lack of published norms, the scale is an effective global index of lack of well-being. Fernsler et al. (1999) suggested that the SWBS is useful for assessing patients' spiritual resources as a reservoir of strength in the face of illness. The SWBS was chosen to examine spirituality as a potential resource for those suffering with symptoms of osteoarthritis.

Spiritual Practices Profile

The spiritual practices profile was created by the researcher for this study to examine the concept of symptom management, by identifying activities that may be performed to manage pain, stiffness, and changes in physical function. Spirituality may enhance self-management of osteoarthritis, as has been shown in other chronic illnesses such as diabetes (Baldwin, 2005; Polzer & Miles, 2005), and HIV (Chou, Holzemer, Portillo & Slaughter, 2004), by serving as a source of support related to managing suffering and meaning in life, and attaining the perception of health and quality of life.

Spirituality is a factor that may influence the self-management of osteoarthritis symptoms for some individuals. Little research has focused on how spiritual beliefs and practices affect the day-to-day challenges of managing the pain, stiffness, and changes in physical function that result with osteoarthritis. It is important to determine as much information as possible about the use of spiritual practices in managing the symptoms of osteoarthritis. The spiritual practices profile has been created for this purpose, and was modeled after the study of self-caring by Baird, Schmeiser, and Yehle (2003), and the study of spiritual activities by Sowell et al. (2000).

The instrument consisted of 20 items regarding things that people may do to enhance symptom management. Included at the end of the list of 18 suggested items, there were 2 items identified as other and followed by a blank line. The purpose of the blank line was to allow the participants to verbalize any additional practices that they identified for inclusion in the list. For each item that the respondent indicated as a current practice (scored as 1 per item), there are 2 additional questions that follow: the frequency of use

and the effectiveness of the practice. Frequency was scored on a scale of 3 (daily), 2 (weekly), and 1 (monthly). Effectiveness was calculated on a scale of 1 (not at all effective) to 5 (very effective).

Missoula-Vitas Quality of Life Index

The Missoula-Vitas Quality of Life Index (MVQOLI), a 15-item, multidimensional instrument was constructed by Byock and Merriman (1998) to assess the five dimensions of symptom, function, interpersonal relationships, well-being, and transcendence. The item structure of the instrument and a scoring system that allowed the weighting of each dimension of quality of life by the respondent were unique features of the instrument. The (MVQOLI) was selected for the symptom outcome measure for this study based on the five dimensions that are measured, minimal duplication with other instruments that were used, and the unique scoring system.

The global score was a separate question regarding overall quality of life, scored from 1 (worst possible) to 5 (best possible). The dimensional subscore calculations were based on the three categories of assessment, evaluation, and importance. For each of the five dimensions, one item represented assessment, one item represented evaluation, and one item represented importance. Assessment plus evaluation equaled the unweighted dimension score. The unweighted dimension score multiplied by importance was calculated to determine the weighted dimension score. Consequently, for the first dimension of symptom, the weighted dimension score was calculated as (question 1 plus question 2 multiplied by question 3 ($Q1 + Q2 \times Q3$)). The other four dimensions were calculated in the same manner for the remaining questions. The total score equaled the

sum of the weighted scores divided by 10 plus 15, which was a mathematical conversion to generate total scores between 0 and 30 (Byock & Merriman, 1998).

The instrument was developed to provide a measure of quality of life that was meaningful to patients, based on the subjective wording of the items that allowed respondents to interpret the measured elements according to their own experiences. The construct measured with the instrument can be stated as the quality of life in the context of progressive, incurable illness that was defined as the subjective experience of an individual with the interpersonal, psychological, and spiritual challenges that accompany physical and functional decline. A person's quality of life can range from suffering associated with physical distress, to the experience of wellness and personal growth arising from the completion of developmental work (Byock & Merriman, 1998).

The validity and reliability of the patient-reported survey instrument was tested with 257 patients in 10 community hospices. Cronbach's alpha equaled 0.77 and demonstrated internal consistency. Information from the instrument could contribute to crafting highly specific interventions, by evaluating patient identified sources of distress, strength, and satisfaction (Byock & Merriman, 1998).

Data Collection Procedures

Once approval to conduct the study was obtained from the investigator's dissertation committee, and the University of San Diego Institutional Review Board (IRB) (Appendix A), a nonprobability, purposive sample of 68 clients diagnosed with osteoarthritis of the hip or knee were recruited from San Diego County. In response to recruitment efforts, the potential study participant contacted the researcher directly. During the phone

contact, the researcher confirmed the subject's age and the diagnosis of osteoarthritis. An explanation of the details of the study including the purpose, the research process, the rights of the participant, the estimated time of one hour to complete the study, and the \$10 compensation for the time spent was discussed with the potential participants. Questions and concerns were addressed, and a convenient location for the interview was arranged with those individuals that agreed, and were qualified to participate in the study. Contact employees/volunteers were available to the researcher from each site to designate meeting areas for conducting the interview. The preferred meeting places included senior centers, coffee shops, and/or the individual's place of residence.

During the interview, all data were collected by the researcher. Most interviews were completed in 45 minutes. The interview was completed by some participants in 30 minutes and others in 60 minutes. The variation in completion time was attributed to the amount of information offered by participants beyond the required item response. After obtaining consent (Appendix D) and screening for depression (Appendix F), the researcher presented questions verbally from the Demographic Profile Questionnaire (Appendix E), the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) (Appendix G), the Spiritual Well-Being Scale (SWBS) (Appendix H), Spiritual Practices Profile (Appendix I), and the Missoula-Vitas Quality of Life Index (Appendix J). The instruments used for data collection in this study are summarized in Table 6.

Table 6

Instrument Summary

Instrument	Variable Measured	Number of Items	Reliability	Administration	Score
Demographic Profile Questionnaire	Age, gender, marital status, diagnosis, treatment, ethnicity, religion, income, occupation, employment, education	15	Created by researcher for the study	5 minutes	Descriptive data
Geriatric Depression Scale (GDS)	Depression	30	Two groups of elderly; one with no mental illness and one treated for depression; Cronbach's alpha 0.94; 92% sensitivity and 89% specificity	5 to 10 minutes	Each item is given a score of 0 or 1 based on the positive or negative answer, and the number of the question Score of 0-9 = normal; 20-30 = severe depression
Western Ontario McMaster Universities Osteoarthritis Index (WOMAC)	Pain, stiffness, and physical limitation symptoms of osteoarthritis of the hip or knee	24	Randomized, controlled trial with 57 patients: Cronbach's alpha ranged from 0.89 to 0.96: 10 day test-retest reliability ranged 0.71 to 0.90 for the scales	5 to 10 minutes	Scored on a categorical scale of 0 (none) to 4 (extreme)

Instrument	Variable Measured	Number of Items	Reliability	Administration	Score
Spiritual Well-Being Scale (SWBS)	Spirituality: existential and religious components	20	Tested with samples of patients with various chronic illnesses. Cronbach's alpha were 0.89 SWB, 0.87 RWB, 0.78 EWB; Test-retest reliability were 0.93 SWB, 0.96 RWB, and 0.86 EWB	5 to 10 minutes	Each item answered on a six point Likert scale, scored 1 (strongly agree) to 6 (strongly disagree) Scale yielded 3 scores: total well-being-SWB, religious well-being-RWB, and existential well-being-EWB
Spiritual Practices Profile (SPP)	Spiritual practices, frequency, and effectiveness of use	20	Created by researcher for the study	15 minutes	For each item indicated as a current practice there were 2 additional questions: Frequency was scored on a scale: 1- monthly, 2-weekly, 3-daily Effectiveness was scored 1 (not at all effective) to 5 (very effective)

Instrument	Variable Measured	Number of items	Reliability	Administration	Score
Missoula-Vitas Quality of Life Index (MVQOLI)	Quality of life-5 dimensions of symptom, function, interpersonal, well-being, transcendent Categories within each dimension are assessment, evaluation, importance	15	Tested with 257 patients in 10 community hospices Cronbach's alpha = 0.77	10 minutes	Dimension scores were weighted based on three categories Total score equaled the sum of the weighted scores divided by 10 plus 15.

The items from each instrument were read to the participant and the responses were documented by the researcher. The response choices, without scoring information, for each instrument were provided for the participant on a separate, easy to read card. The purpose of the card was to simplify the response process for the older adult, and also to minimize any unintentional influence from the researcher based on how the response choices were presented.

Protection of Human Subjects

Prior to collecting any data, written informed consent was obtained and the participant was given a copy of the consent form. The participant read the consent form and was given the opportunity to discuss the consent form and ask questions. Each participant was also provided with two contact numbers for further information regarding the study, including that of the researcher and her Dissertation Chairperson.

To guarantee anonymity and confidentiality, every participant was informed that data

shared with the researcher would be confidential, and that research findings would be reported as group data. Participants were also instructed that withdrawal from the study at any time, for any reason, was permissible without question from the researcher, or consequence to health care as currently provided. The participants would incur no expenses during the study other than their time. Additionally, participants were informed that they may be at risk for fatigue and such negative emotions as anxiety and sadness during response to questions. If fatigue occurred, the participant may terminate the interview at any time to re-schedule it, or may choose to not continue in the study. The number to the San Diego Mental Health Hotline, 1-800-479-3339 was provided to participants on the consent form for further emotional support if needed. Given the potential benefits resulting from this study to examine spiritual practices as a symptom self management strategy for men and women living daily with osteoarthritis, the potential benefits were believed to outweigh the potential risks involved in this study.

Data Analysis Plan

The Statistical Package for the Social Sciences (SPSS/16) was used to perform the analysis of data. Descriptive and inferential statistics were used to describe the findings and to answer the research questions. Descriptive statistics were used to summarize the demographic and all instrument items, and to identify central tendency, variability, and percentages of key variables. Reliability coefficients were calculated on all instruments and subscales to assure adequate internal consistency of the instruments used for this sample (refer to Table 6). Table 7 provides a summary of statistical methods used to answer each of the research questions.

Table 7

Summary of Statistical Methods Used to Answer Each Research Question

Research Question	Statistical Method
Is there a relationship between level of Spiritual Well-Being and particular demographics, perceived pain, joint stiffness, or functional status of primary care clients with osteoarthritis?	Inferential statistics Pearson product-moment correlation
Do primary clients with osteoarthritis use spiritual practices to manage their symptoms?	Descriptive statistics
What are the spiritual practices they employ, how frequently are they used, and how effective do they perceive them to be?	Descriptive statistics
Is there a relationship between level of Spiritual Well-Being and quality of life for primary care clients with osteoarthritis?	Inferential statistics Pearson product-moment correlation

Limitations

The sample was a statistically adequate, non-experimental, voluntary convenience sample, with probable homogeneity with respect to age. Whether the nature of the relationships will generalize to different populations remains an empirical question. The one time data collection procedure does not allow for change over time.

The study instruments utilized were based on self-report. The concern regarding this issue was the potential for social desirability. Cards were provided with respondent choices for each instrument to guard against this concern, however it remains a noteworthy limitation. The participants that were recruited were not severely physically impaired, and reported low levels of discomfort from pain and stiffness. The use of a

clinical self-reported diagnosis of osteoarthritis for the majority of participants may be viewed as a limitation as well.

Chapter 4

Results and Discussion of Findings

The research findings are presented in this chapter. The results and discussion of findings as related to each research question are presented in connection to the study's conceptual framework and literature review.

Results

Demographic Data

general demographics.

Table 8 presents a summary of the general demographic data for this sample of 68 adults interviewed between July, 2007 and April, 2008. Age for this sample was normally distributed with a mean age of 72.9 years (SD=10.24) and a range of 50-94 years. The age categories for this sample were determined according to classifications of aging, defined in the Oxford English Dictionary (1989), as middle age 50-64, the young-old 65-74, the old-old 75-84, and the oldest-old 85 years plus. Over half of the sample reported their age between 65 and 84 years of age.

The study sample consisted of 54 females (79.4%) and 14 males (20.6%). Most participants were either married (44.1%, n=30) or widowed (33.8%, n=23). This sample was primarily Caucasian (79.4%, n=54) or Hispanic (14.7%, n=10).

Religious affiliation was determined by an open ended question asking each participant to state his or her religious preference. The participants most frequently

reported themselves as Catholic (39.7%, n=27) or Protestant (26.5%, n=18). The participants stating Methodist, Lutheran, or Protestant were all recorded as Protestant. It is interesting to note that of the remaining 32.4%, there was an equal number of participants (11), who reported a Christian, non-denominational preference, and no religious preference (16.2%, n=11).

The majority of participants (n=58, 85.3%) reported that they had adequate financial resources to manage their healthcare concerns. All participants reported an occupation, with 29 indicating that they held a blue collar position and 39 a white collar position, although the majority of participants reported their current work status as retired (n=48, 70.6%). The sample consisted of well educated individuals with 24 (35.5%) attending college, 17 (25%) attaining college degrees, and 14 (20.6%) with graduate degrees.

Table 8

General Demographics of the Sample

Age		n	%		
Middle Age	50-64 years	16	23.5		
Young-Old	65-74 years	22	32.4		
Old-Old	75-84 years	19	27.9		
Oldest-Old	85 plus yrs.	11	16.2		
Marital Status		N	%	Ethnic Background	N %
Married		30	44.1	Caucasian	54 79.4
Separated		2	2.9	Hispanic	10 14.7
Divorced		11	16.2	Asian	3 4.4
Widowed		23	33.8	American Indian	1 1.5
Single		2	2.9		
Religious Affiliation		n	%	Educational Achievement	n %
Catholic		27	39.7	< High School	4 5.9
Protestant		18	26.5	High School	9 13.2
LDS		1	1.5	College Classes	24 35.3
Non-Denominational		11	16.2	College Degree	17 25.0
None		11	16.2	Graduate School	14 20.6
Occupation		n	%	Work Status	n %
White Collar		39	57.4	Employed	20 29.4
Blue Collar		29	42.6	Retired	48 70.6
Gender		n	%	Financial Resources	n %
Male		14	20.6	Yes	58 85.3
Female		54	79.4	No	10 14.7

osteoarthritis demographics.

Table 9 presents data regarding length of time since osteoarthritis diagnosis, the joint affected, the use of alternative therapy, and treatment for this sample. The length of time since osteoarthritis diagnosis ranged from < one year to greater than 10 years. Almost half of the participants (n=32, 47.1%) had been managing osteoarthritis for 10 or more years. The knee (n=43, 63.2%), was reported to be the most common joint affected. Over half of the participants reported being treated with medication (n=42, 61.8%). Alternative therapies were used by many (n=26).

Table 9

Osteoarthritis Demographics of the Sample

Years Since Diagnosis	n	%	Type of Treatment	n	%
10 or more years	32	47.1%	Medication	42	61.8%
7-9 years	9	13.2%	Surgery	13	19.1%
4-6 years	15	22.1%	Physical Therapy	1	1.5%
1-3 years	6	8.8%	None	12	17.6%
<1 year	6	8.8%			
Joint Affected	n	%	Alternative Therapy	n	%
Hip	25	36.8%	Yes	26	38.2%
Knee	43	63.2%	No	42	61.8%

spiritual inner resource.

Highlights regarding the descriptive statistics for spiritual well-being in this sample included the following: (a) No total SWB or EWB scores were low, (b) there was

greater variability in RWB subscale scores (refer to range, mean, and standard deviation for SWB scores in Table 10). High internal consistency reliabilities were calculated for the SWB, RWB, and EWB with Cronbach alpha values .928, .972, and .883 respectively.

Table 10

Descriptive Statistics for Study Variables Measuring Spiritual Well-Being Resource – SWBS (N=68)

Variable	Possible Score Range	Mean	SD	Sample Score Range
Spiritual Well-Being (SWB)	20-120	100.06	16.63	51-120
RWB	10-60	48.94	13.35	10-60
EWB	10-60	51.12	7.16	37-60

In summary, the sample consisted primarily of well educated, retired, married, Caucasian, female young old and old-old adults with adequate financial resources to manage their health care, who reported high levels of spiritual well-being, and had experienced varying degrees of osteoarthritis symptoms for greater than 10 years.

Symptom Experience

Highlights regarding the descriptive statistics to operationalize the symptom experience concept for this sample of primary care clients with osteoarthritis included the following: (a) they scored low in terms of reported pain, stiffness, and physical function, and (b) there was minimal variability in pain and stiffness subscale scores (refer to range, mean, and standard deviation for WOMAC scores in Table 11). The WOMAC subscale

scores for pain, stiffness, and physical function had Cronbach alpha coefficients of .545, .617, and .851 respectively with the current sample.

Table 11

Descriptive Statistics for Study Variables Measuring Symptom Experience – WOMAC (N=68)

Variable	Possible Score Range	Mean	SD	Sample Score Range
WOMAC Total	0-96	27.35	14.17	2-63
WOMAC=Pain	0-20	5.54	3.21	0-14
WOMAC-Stiffness	0-8	2.75	1.80	0-7
WOMAC-Physical Function	0-68	19.05	10.66	1-46

depression.

While depression was not a variable in the model being tested, it was measured as a possible confounder to other variable correlations, since depression has been associated with the perception of increased pain. No data from subjects was excluded from the data analysis as a result of severe depression (a score of 20 and above on the Geriatric Depression Scale). The scores for this study ranged from 0 to 18, with only three participant scores that indicated the presence of mild depression. Calculated with the Kuder-Richardson 20 formula as the test of internal consistency for binary items, the Cronbach alpha of .719 was determined for this sample (Kerlinger, 1986).

Symptom Management

The spiritual practices profile was created by the researcher, as an initial attempt with instrument development, to determine the spiritual practices that are endorsed by participants as effective strategies for symptom management of osteoarthritis.

Cronbach's alpha of .769 was calculated with the Kuder-Richardson 20 formula as the test of internal consistency for binary items (Kerlinger, 1986). The possible score range for this instrument was 0-18, with the sample score range of 2-17. The mean of 10.51 and standard deviation of 3.55 was calculated. Highlights from these descriptive statistics regarding the spiritual practices profile included: (a) all participants used some of the spiritual practices listed (b) the average number of practices used by the participants was 11 (c) there were 16 participants that did not use at least 10 practices.

As reported in Table 12, the spiritual practices most frequently endorsed were to laugh (97%), to trust in a higher power (91%), and to both pray and take problems to a higher power (82%). The least likely spiritual practices to be utilized were attending support groups (10%), teaching others about arthritis (20%), helping others with arthritis (30%), and accepting arthritis as God's will (36%). All spiritual practices used were perceived to work well for managing the symptoms of osteoarthritis (refer to mean effectiveness scores). It was interesting to note that the least likely practices utilized were also found to be very effective. Elicited suggestions from participants to be included on the profile were to thank God (n=1), aromatherapy (n=1), acupuncture (n=1), listen (n=2), lose weight (n=2), appreciate nature (n=3), massage (n=4), yoga (n=6), and exercise (n=14).

Table 12

Descriptive Statistics Related to Use and Effectiveness of Spiritual Practices

Variable	n	Percent	Mean Effectiveness
Item			
Read religious books/scriptures	41	60.3%	4.29
Pray	56	82.4%	4.30
Quiet meditation	52	76.5%	4.34
Attend services	37	54.4%	4.54
Trust in a higher power	62	91.2%	4.37
Take problems to a higher power	56	82.4%	4.42
Ask for forgiveness	49	72.1%	4.53
Listen to inspirational messages	37	54.4%	4.10
Accept arthritis as God's will	25	36.8%	3.92
Share God with others	42	61.8%	4.21
Laugh	66	97.1%	4.69
Remember the past	44	64.7%	4.13
Participate in activities sponsored by place of worship	31	45.6%	4.19
Attend support groups	7	10.3%	4.57
Teach others about arthritis	14	20.6%	4.57
Use relaxation methods	41	60.3%	4.56
Do things to take mind off arthritis	34	50%	4.08
Help others with arthritis	21	30.9%	4.47

Symptom Outcome

Highlights regarding the descriptive statistics to operationalize the symptom outcome concept for this sample of primary care clients with osteoarthritis included the following: (a) participants scored highest in the global quality of life category, (b) there was minimal variability between total quality of life, symptom, and transcendent scores (c) there was minimal variability between function, interpersonal relationships, and well-being (refer to range, mean, and standard deviation for MVQOLI scores in Table 13).

Table 13

Descriptive Statistics for Study Variables Measuring Quality of Life Symptom Outcome – MVQOLI (N=68)

Variable	Possible Score Range	Mean	SD	Sample Score Range
Quality of Life (MVQOLI) Total	0-30	19.87	2.53	14.70-24.50
Global	1-5	4.25	.655	3-5
Symptom	-30-30	4.62	4.44	-4-12
Function	-30-30	5.43	9.82	-20-25
Interpersonal relationships	-30-30	13.09	12.25	-10-30
Well-being	-30-30	5.82	13.47	-20-30
Transcendent	-30-30	19.17	6.42	6-30

Cronbach's alpha coefficient for the total MVQOL score was computed as .299 with the current sample.

Relationships Between Level of Spiritual Well-Being and Particular Demographics

Correlational techniques were used to study the potential relationships between spiritual well-being and the following demographic characteristics: gender, adequate financial resources, years since osteoarthritis diagnosis, and highest level of education.

Table 14

Correlation Coefficients for Spiritual Well-Being and Demographics (N=68)

Spiritual Well-Being Variable	Gender	Adequate Finances	Years Since Diagnosis	Highest Level of Education
Religious Well-Being	-.052 (p=.67)	-.130 (p=.29)	-.002 (p=.985)	.022 (p=.859)
Existential Well-Being	-.268 (p=.027)*	-.480 (p=.000)**	.121 (p=.325)	.268 (p=.027)*
Total Spiritual Well-Being	-.157 (p=.20)	-.311 (p=.010)**	.050 (p=.684)	.117 (p=.343)
Note. *significance at < .05		**significance at <.01		

The osteoarthritis demographics were not significantly correlated with spiritual well-being. Spiritual well-being was found to be statistically significant with all of the general demographics computed. The Point biserial correlation of gender and spiritual existential well-being were found to be negatively correlated ($r = -.268$, $p < .05$). These findings suggest that a higher score of existential well-being was associated with males. This finding would indicate that a high level of satisfaction with life and a clear sense of purpose were associated with men. There was a significant negative correlation ($r = -.31$, $p < .01$) between total spiritual well-being and adequate finances to manage health care concerns. A significant negative correlation ($r = -.48$, $p < .01$) was also found between the spiritual existential well-being subscale and finances. These findings suggest, that for this group of individuals with osteoarthritis, higher spiritual existential well-being scores

are related to higher levels of education and having adequate finances to manage health care concerns.

Relationships Between Level of Spiritual Well-Being and Perceived Pain, Joint Stiffness, and Physical Function

Correlational techniques were used to compute the relationships between the level of spiritual well-being and the symptom experience of the 68 participants in the sample. The statistically significant relationships found existed between existential well-being and physical function and total score (refer to Table 15).

Table 15

Correlation Coefficients for Level of Spiritual Well-Being and Perceived Pain, Joint Stiffness, and Physical Function (N=68)

Spiritual Well-Being Variable	WOMAC Pain Score	WOMAC Stiffness Score	WOMAC Function Score	WOMAC Total Score
Religious Well-Being	.172 (p=.161)	.118 (p=.337)	-.018 (p=.885)	.041 (p=.742)
Existential Well-Being	-.133 (p=.278)	-.057 (p=.646)	-.294 (p=.015)*	-.259 (p=.033)*
Total Spiritual Well-Being	.081 (p=.513)	.070 (p=.569)	-.141 (p=.251)	.079 (p=.523)

Note. *significance at < .05 **significance at <.01

A statistically significant inverse relationship was found to exist between physical function limitations and spiritual existential well-being scores for this sample ($r = -.294$, $p < .01$). This finding suggests a higher level of spiritual existential well-being was associated with decreased physical function limitations during activity. The r of negative .294 is suggested by Cohen (1988) as a moderate effect size. When the relationship is graphed in a scatterplot, there is a definite linear and nonlinear/quadratic relationship between existential well-being and reduced limitations of physical function accounting

for 8.7% and 12.9%, respectively, of the variance (r^2 linear=.087 and r^2 quadratic=0.129). The strength of this relationship is supported by the adequate reliability estimates of the instrument subscale used to measure the variable of physical function limitations. No significant relationship was found for the subscales measuring pain and stiffness.

Relationships Between Level of Spiritual Well-Being and Quality of Life

As reported in Table 16, pearson correlation was computed to examine relationships which existed between level of spiritual well-being and quality of life as measured by the Missoula Vitas Quality of Life Index. No statistically significant religious spiritual well-being correlations were found with quality of life.

Table 16

Correlation Coefficients for Level of Spiritual Well-Being and Quality of Life Symptom Outcome (N=68)

Spiritual Well-Being Variable	MVQOLI Symptom	MVQOLI Function	MVQOL Interpersonal Relationships	MVQOLI Well-Being	MVQOLI Transcend	MVQOLI Overall QOL
Religious Well-Being	.038 p=.758	-.025 p=.839	.157 p=.202	.173 p=.158	.135 p=.272	.084 p=.498
Existential Well-Being	.082 p=.508	.126 p=.306	.342 p=.004**	.349 p=.003**	.298 p=.014**	.484 p=.000**
Total	.066	.034	.273	.289	.237	.275
Spiritual Well-Being	p=.594	p=.782	p=.024*	p=.017*	p=.052*	p=.023*

Note. *significance at < .05 **significance at <.01

Statistically significant relationships were found to exist between existential spiritual well-being and overall quality of life, and the following three subscale categories within the multidimensional instrument: interpersonal relationships, well-being, and transcendent. This positive correlation suggests that higher spiritual existential well

being levels are associated with increased quality of life ($r=.484$, $p=.000$), interpersonal relationships ($r=.342$, $p=.004$), well-being ($r=.349$, $p=.003$), and transcendence ($r=.298$, $p=.014$). Significant positive correlations were also found between total spiritual well-being scores and overall quality of life ($r=.275$, $p=.023$), interpersonal relationships ($r=.273$, $p=.024$), well-being ($r=.289$, $p=.017$) and transcendent ($r=.237$, $p=.052$) categories of quality of life.

Discussion of the Findings Related to the Research Questions

Relationship Between Spiritual Well-Being and Demographic Variables

Findings reported by other researchers support the statistically significant, positive relationship found in this study between spiritual well-being and the demographic for adequate financial resources and higher education. An unexpected finding of this study was the statistically significant association of existential spiritual well-being with men. This result could be attributed to social desirability related to the interview process. The strength of the instrument used to measure spiritual well-being, and similar findings by Chin-A-Loy and Fernsler (1998), while examining self-transcendence in older men, suggest that this finding may be very important.

Relationship Between Spiritual Well-Being and Symptom Experience

Existing literature supports that increased pain and stiffness are expected findings for community residing individuals (Baird & Schmeiser, 2003; Pahor et al., 1999; Peat et al., 2001). The perceived pain and stiffness for participants in this study was low and unexpected. Other factors are related to the perception of pain. Lower age, lower income depression (Pahor et al., 1999), uncertainty (Landis, 1996), and obesity (Lamb et al.,

1999; Sandmark et al., 1999; Lievense et al., 2002), have been found to be associated with higher levels of pain. The study sample participants were older, not depressed adults with adequate financial resources. Obesity was not measured.

The significant relationship between existential spiritual well-being and physical function was expected, and is supported by existing literature (Popkess-Vawter et al., Potter & Zauszniewski, 2000). A high pain severity score increases the risk of mobility limitation (Lamb et al., 1999; Peat et al., 2001) and is associated with physical disability (Pahor et al., 1999).

Use of Spiritual Practices

The extensive use of spiritual practices found in this study was congruent with other findings that suggested the role of spirituality in health and wellness, and demonstrated significant relationships between spiritual activities and adaptational outcomes within the context of chronic illness (Baird et al., 2003; Katz, 1998; Sowell et al., 2000). Reed (1991) has proposed that spiritual activities enable the individual to transcend the context of everyday life. The results of the study by Katz suggested that persons with advanced education, as prevalent within this sample of clients with osteoarthritis, were more likely to engage in self-care activities.

Frequency and Effectiveness of the Spiritual Practices Employed

The findings from the study were more than expected in several different ways: (a) the effectiveness scores were higher than expected, (b) suggested contributions were greater than expected, and (c) the items suggested were not anticipated.

Relationship Between Spiritual Well-Being and Quality of Life

The statistically significant relationships between total and existential spiritual well-being and quality of life were expected and supported by existing literature (Tate & Forchheimer, 2002; Tuck et al., 2001). Baird et al. (2002) reported the importance of increased interpersonal relationships, and the ability of women living in the community to adapt to changes in their functioning. Similar findings are suggested for this sample of community residing participants, based on the statistically significant results found in the interpersonal relationships, transcendence, and well-being subscale categories of quality of life. It is interesting to note the similarities between the measurement of symptom with this instrument and with the WOMAC instrument as previously discussed.

Chapter 5

Conclusions and Implications

Conclusions

The major findings of the study included: (a) higher levels of spiritual existential well-being were associated with men, adequate financial resources, and higher education (b) higher levels of existential spiritual well-being were related to improved physical function (c) primary care clients in this sample used spiritual practices extensively and found them to be very effective (d) the levels of both existential and total spiritual well-being were significantly positively related to quality of life, transcendence, interpersonal relationships, and well-being.

The purpose of this discussion is to add to the nurse's understanding of the relationship between spirituality, health, and self-management of illness, particularly for the primary care client with osteoarthritis of the hip or knee. In addition to the major findings as presented, the study was designed to accomplish three objectives: (a) to advance theoretical understanding of how spirituality can be defined, measured, and applied as a self-care activity to manage symptoms of osteoarthritis, (b) to provide an initial attempt at instrument development that would serve as a symptom management intervention, (c) to examine the relationships among symptom experience, and symptom outcome based on spiritual well-being. The objectives of the study were met, and the research questions were affirmatively answered and supported with statistically significant relationships.

Implications

Osteoarthritis is a progressive disease that is associated with pain and disability. There is no cure and the disease is characterized by unpredictable exacerbations. Lower age, lower income, depression (Pahor et al., 1999), uncertainty (Landis, 1996), and obesity (Lamb et al., 1999; Sandmark et al., 1999; Lievense et al., 2002), have been found to be associated with higher levels of pain. The perception of pain and the associated physical decline and disability that did not occur for the participants in this study may be attributed to the higher level of spiritual well-being or the characteristics of the sample. Further research with a sample characterized by different demographic data, including the variables of uncertainty and obesity, would be warranted.

Guided by the Revised Symptom Management Model (Dodd, 2001) relationships were found among osteoarthritis pain, stiffness, and physical function, and spiritual self-management practices, and quality of life. The model has served as a framework for understanding symptoms, designing management strategies, and evaluating outcomes. The interrelatedness of these components is important for understanding the significant findings of this research and for planning future research. The person domain, represented by spiritual well-being, was significantly related to the outcome variables of quality of life, well-being, transcendence and interpersonal relationships. The individual's level of spiritual well-being was also significantly related to the symptom experience of physical function. Within the context of the model, the person variable of spiritual well-being is intrinsic to the way an individual views and responds to a symptom (Dodd et al., 2001). The high levels of spiritual well-being for participants in this study

may have been the inner resource that minimized the perception of pain and stiffness for this sample.

Individuals need to discover and develop internal resources that empower them to self-direct their disease management. The specific spiritual practices that were endorsed by participants in this study, were used frequently and were reported to be effective in managing the symptoms of osteoarthritis. Understanding the self-care strategies that patients use to manage their symptoms is critical for health care providers to assist patients in maintaining function and quality of life. These practices can then be made accessible to all people on a minute to minute, hour to hour basis as they struggle to manage their symptoms. Spiritual practices are readily available and cost effective, and offer treatment without toxicities or side effects. The findings of this study provide a beginning understanding of the role of spiritual activities in symptom management strategies. Further research is warranted with instrument development to address the measurement of spiritual activities.

Within the context of the model, outcomes emerge from symptom management strategies (Dodd et al). Further study is needed to examine the effects of spiritual activities on a full range of adaptational outcomes, and to evaluate the effectiveness of specific spiritual interventions. A weight loss or exercise program that is facilitated within the framework of developing inner strength, a sense of wholeness or well-being and the capacity for self-transcendence could become an intervention for those managing symptoms of chronic illness. The identified spiritual practices found in this study could become additional interventions for future empirical research.

*Recommendations**Nursing Practice*

The spiritual dimension of care is a valid concern within the nursing profession. A deeper understanding of spirituality through the findings of this study can enhance the extent to which nurses incorporate spiritual care into nursing practice. An awareness of the frequency and the effectiveness of patients' spiritual practices to manage the symptoms of osteoarthritis provides a logical place for crafting interventions. Three of the most effective and commonly used spiritual practices were found to be trusting in a higher power, laughing, and praying. These three practices could readily be acknowledged within any healthcare environment. Implementation would require minimal time, effort, or space.

Adaptation of the Missoula Vitas Quality of Life Index to the clinical practice arena would be recommended as an additional tool to generate patient care interventions. The Index was originally developed to be meaningful for both clinicians and patients. Although it was originally designed for use with terminally ill patients, the findings of this study indicate that it may be appropriate in chronic illness contexts where there are no cures. The MVQOLI could be completed in a short time by patients of varied educational level, age, and functional status. The instrument is designed to contribute to the task of planning care by evaluating sources of individual strength and distress (Byock & Merriman, 1996).

There is a wide range of current treatment options for osteoarthritis, and the evidence supporting the effectiveness is variable. The findings of this study support a

nursing management plan that takes into account holistic factors such as assessment of depression, activity, patient beliefs, education, and spiritual practices. The potential cost benefit from a decrease in functional limitations could be substantial based on the following premises: decreased physician and medical treatment costs, decreased costs related to complications of medications, reduced risk of falls and costly complicating injuries, diminished cost potential for lost work hours, medical disability or early retirement, and prevention of further disability.

Nursing Education

The medical surgical component in nursing curriculums has been broadened to include a chronic disease management focus. The conceptual and theoretical contributions from the review of literature, which are supported by the results of this study, would appropriately be included within the context of chronic disease management courses. The growing body of knowledge that addresses the self-care ability of individuals to manage long term, daily suffering, would prepare nurses to think and practice in the context of health as a sense of well-being, rather than health defined in terms of a cure for physical illness (Reed, 1992).

Study findings may imply a need to examine clinical placement sites related to medical surgical rotations for nursing students. Community based settings where students can observe and participate in programs that promote self-care strategies for maintaining function, independence, and management of symptoms should be sought. Classroom and clinical assignments that encourage students to utilize spiritual practices, or to develop interventions within the spiritual dimension of care could be beneficial to

future nursing practice and research.

Nursing Research

Additional research is warranted to further examine the findings reported from this research. This study could be replicated, however, limitations of the study should be addressed in future research. Findings from this study could not be generalized to any specific marital status, occupation, or treatment modality. Generalization of the findings is limited by the homogeneity of the sample. The participants represented a group that consisted primarily of well educated, retired, married, Caucasian, female, young old and old-old adults with adequate financial resources to manage their health care, who have experienced varying degrees of osteoarthritis knee pain, stiffness, and functional decline for greater than 10 years. This study could be replicated using a random, larger, and more diverse sample to enhance generalizability of the findings. A longitudinal approach would lead to a more comprehensive understanding of the relationship between spiritual well-being and symptom experience. The unpredictable nature of osteoarthritis and the potential for developing exacerbations would support a longitudinal design.

In addition, despite the supporting conceptual and empirical literature, and the statistically significant relationships found between quality of life, transcendent, well-being and interpersonal relationships and higher levels of spiritual existential well-being, the author has some concern regarding the use of the MVQOLI instrument with this sample. The reliability was low with this sample, and the instrument was originally designed to be used with terminally ill patients suffering from incurable disease. Osteoarthritis is incurable but not terminal.

This study could be added to a review of literature focusing on the combined approach to spirituality that is related to attaining the perception of health and quality of life. The findings of this study contribute to the literature focusing on the combined approach to spirituality and the self-management of osteoarthritis symptoms in three specific ways: (a) spirituality can be a unifying force that integrates the social and physical dimensions of health, (b) the results of this study suggest that there is a correlation between the social (interpersonal category of quality of life measure) and physical (decreased physical function limitations during activity) impact of osteoarthritis based on higher levels of spiritual well-being, (c) the use of the Spiritual Well-Being Scale and the Revised Symptom Management Model has provided empirical data to include the population of those suffering with osteoarthritis.

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Appendix B
Informational Letter to Health Care Provider

Date:

Health Care Provider
Street Address
City, State Zip Code

Dear Healthcare Provider,

Thank you so much for taking the time to speak with me about my dissertation research project. As I mentioned in our conversation, I am sending you a more detailed description of the study along with a sample of the flier.

I am a Public Health Nurse educator and researcher, conducting a study to examine the variables of spiritual well-being and self management of osteoarthritis symptoms. Patients included in this study will be 50 years of age or more, able to speak, read, and understand English, and diagnosed with knee or hip osteoarthritis. Inclusion criteria for diagnosing knee osteoarthritis will be classified as a clinical diagnosis with presenting (a) knee pain for more than 25 of the past 30 days; (b) morning stiffness of less than 30 minutes; and (c) crepitation in the knee; and/or radiographic diagnosis when there is knee pain for more than 25 of the past 30 days and (b) osteophytes on x-ray examination of the knees. Patients with hip osteoarthritis will be included when there is (a) hip pain for more than 25 of the past 30 days and/or (b) at least 2 of the following 3 criteria: (1) erythrocyte sedimentation rate $<20\text{mm}/1\text{st h}$; (2) osteophytes on x-ray examination; or (3) obliteration of joint space.

Thank you for allowing fliers about the study to be posted in your facility. Participation in the study will involve a one hour meeting with the researcher to obtain their consent and responses to several questions from the following instruments: Demographic Profile Questionnaire, Geriatric Depression Scale (GDS), Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC), Spiritual Practices Profile (SPP), Spiritual Well-Being Scale (SWBS), and the Missoula-Vitas Quality of Life Index (MVQOLI). The participants will be given \$10 for their time.

Thank you for your cooperation in helping with this important research project. Please contact me anytime at (760) 941-5309 if you have any further questions.

Respectfully,

Lois Kannan, RN, MSN, PhDc

Appendix C
Recruitment Flier

LIVING WITH OSTEOARTHRITIS IS HARD!

HOW DO YOU MANAGE?

I am a Doctoral student in Nursing
at the University of San Diego.

I am seeking adults age **50 and over** to
participate in a research study. If you have been diagnosed
with **knee or hip osteoarthritis**, I would like to talk to you.

Participation will require an hour of your time at a
convenient location.

You will receive a monetary compensation of \$10.00 for
participating in the study.

**To Get Involved,
Please Contact
Lois Kannan RN, PhDc at (760) 941-5309**

Appendix D
Research Participant Informed Consent Form

Spirituality and Self Management of Osteoarthritis Symptoms

Introduction

Lois Kannan is a doctoral student in nursing at the Hahn School of Nursing and Health Science at the University of San Diego. You are invited to participate in a dissertation study she is conducting for the purpose of exploring how people with osteoarthritis cope with their symptoms.

Purpose

The purpose of the research project is to learn more about how spirituality impacts the potential pain, joint stiffness, and activity restriction that may result from having osteoarthritis, and what spiritual practices you may use to manage these symptoms.

Procedures

The research project will involve one interview that will take about 60 minutes. Questions will be asked of you about how you feel about yourself, your relationships, your spiritual practices, and the symptoms that you may be experiencing with osteoarthritis. You will also be asked general questions about yourself such as age and occupation.

Risks

There may be a risk that responding to the questions during the interview may make you feel tired, or anxious, or sad. If you would like to talk to someone about your feelings, you can call: **San Diego Mental Health Hotline at 1-800-479-3339**. Remember you can stop the interview at any time you feel tired or for any other reason.

Benefits

The benefit to participating will be in knowing that you helped healthcare providers learn how to better assist individuals who are managing the symptoms of osteoarthritis.

Participant Costs and Payment

You will receive \$10 in cash for participating in the research project, and there will be no cost to you other than an hour of your time. Lois will give you the \$10 even if you start the interview and decide not to finish it.

Confidentiality

Any information provided and/or identifying records will remain confidential and safeguarded in a locked fireproof safe/file in Lois Kannan's home for a minimum of five years. All data collected from you will be coded with a number and not your name. The results of the research project may be made public and information quoted in professional journals or meetings, but information from this study will only be reported as a group, and not individually.

Voluntary Participation and Withdrawal

Participation in the research project is entirely voluntary and you can refuse to answer any question and/or quit at any time. Should you choose to quit, no one will be upset with you. Lois will still give you the \$10.00. Deciding not to participate or answer some of the questions will have no effect on your health care or any other services you might receive from doctors, nurses, or social services.

More Information

If you have any additional questions about this research project, please contact Lois

Kannan at (760) 941-5309. You may also contact Dr. Linda Robinson, the professor who is supervising Lois' research, at the University of San Diego (619) 260-4571 for additional information.

I have read and understand this form, and consent to the research as it is described to me.

I have received a copy of this consent form for my records.

Signature of Participant

Date

Name of Participant (Printed)

Signature of Investigator

Date

Appendix E
Demographic Profile Questionnaire

ID Code # _____

In order to better understand you and the impact your life experiences and health history may have on this research, please respond to the following questions.

Today's Date: _____

1. Gender: Male _____ Female _____

2. How old are you? _____

3. Are you married, separated, divorced, or widowed? (Circle response)

4. How long have you had osteoarthritis? (Circle response below)

Less than 1 year 1-3 years 4-6 years 7-9 years 10 or more years

5. Where do you have osteoarthritis? Hip Knee

6. What type of treatment(s) are you using? _____

7. Have you used other therapies, such as herbs, copper bracelets, etc.? _____

8. When was your last treatment? _____

9. What type of treatment was it? _____

10. What is your ethnic background? _____

11. Do you have a religious affiliation? If so, please state: _____

12. Do you feel you have adequate financial resources to manage your healthcare concerns? _____

13. What is/was your occupation? _____

14. Are you currently employed? _____

15. What is your highest level of education? _____

Appendix F
Geriatric Depression Scale

ID Code# _____

Directions to examiner: Present questions VERBALLY. Circle answer given by participant. Do not show to participant. Begin by saying, "I'm going to ask you a series of 'yes or no' questions. Please say 'Yes' or 'No' for how you have felt **over the past week**."

1. Are you basically satisfied with your life?	yes	no (1)
2. Have you dropped many of your activities and interests?	yes (1)	no
3. Do you feel that your life is empty?	yes (1)	no
4. Do you often get bored?	yes (1)	no
5. Are you hopeful about the future?	yes	no (1)
6. Are you bothered by thoughts you can't get out of your head?	yes (1)	no
7. Are you in good spirits most of the time?	yes	no (1)
8. Are you afraid that something bad is going to happen to you?	yes (1)	no
9. Do you feel happy most of the time?	yes	no (1)
10. Do you often feel helpless?	yes (1)	no
11. Do you often get restless and fidgety?	yes (1)	no
12. Do you prefer to stay at home rather than go out and do things?	yes (1)	no
13. Do you frequently worry about the future?	yes (1)	no
14. Do you feel you have more problems with memory than most?	yes (1)	no
15. Do you think it is wonderful to be alive?	yes	no (1)
16. Do you feel downhearted and blue?	yes (1)	no
17. Do you feel pretty worthless the way you are now?	yes (1)	no
18. Do you worry a lot about the past?	yes (1)	no
19. Do you find life very exciting?	yes	no (1)
20. Is it hard for you to get started on new projects?	yes (1)	no
21. Do you feel full of energy?	yes	no (1)
22. Do you feel that your situation is hopeless?	yes (1)	no
23. Do you think that most people are better off than you are?	yes (1)	no
24. Do you frequently get upset over little things?	yes (1)	no
25. Do you frequently feel like crying?	yes (1)	no
26. Do you have trouble concentrating?	yes (1)	no
27. Do you enjoy getting up in the morning?	yes	no (1)
28. Do you prefer to avoid social occasions?	yes (1)	no
29. Is it easy for you to make decisions?	yes	no (1)
30. Is your mind as clear as it used to be?	yes	no (1)

TOTAL: Please sum all bolded answers worth one point for a total score. _____

Scores: 0-9 Normal 10-19 Mild Depression 20-30 Severe Depression

Yesavage et al., 1982 (Public Domain)

Appendix G
Western Ontario McMaster Universities Osteoarthritis Index

ID Code# _____

This is an opportunity for you to share with us about your experience related to osteoarthritis. Three common symptoms are included in this survey. For each of the following activities state the choice that best describes your personal experience:

	0=None	1=Slight	2=Moderate	3=Severe	4=Extreme
Pain:					
a) walking	0	1	2	3	4
b) stair climbing	0	1	2	3	4
c) nocturnal	0	1	2	3	4
d) rest	0	1	2	3	4
e) weight bearing	0	1	2	3	4

Stiffness:

a) morning stiffness	0	1	2	3	4
b) stiffness occurring later in the day	0	1	2	3	4

Physical function:

a) descending stairs	0	1	2	3	4
b) ascending stairs	0	1	2	3	4
c) rising from sitting	0	1	2	3	4
d) standing	0	1	2	3	4
e) bending to floor	0	1	2	3	4
f) walking on flat	0	1	2	3	4
g) getting in or out of car	0	1	2	3	4
h) going shopping	0	1	2	3	4
i) putting on socks	0	1	2	3	4
j) rising from bed	0	1	2	3	4
k) taking off socks	0	1	2	3	4
l) lying in bed	0	1	2	3	4
m) sitting	0	1	2	3	4
n) getting in/out of the bath	0	1	2	3	4
o) getting on/off the toilet	0	1	2	3	4
p) heavy domestic duties	0	1	2	3	4
q) light domestic duties	0	1	2	3	4

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Appendix H
Spiritual Well-Being Scale

ID Code # _____

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

SA = Strongly Agree	D = Disagree
MA = Moderately Agree	MD = Moderately Disagree
A = Agree	SD = Strongly Disagree

1. I don't find much satisfaction in private prayer with God.	SA	MA	A	D	MD	SD
2. I don't know who I am, where I come from, or where I am going.	SA	MA	A	D	MD	SD
3. I believe that God loves me and cares about me.	SA	MA	A	D	MD	SD
4. I feel that life is a positive experience.	SA	MA	A	D	MD	SD
5. I believe that God is impersonal and not interested in my daily situations.	SA	MA	A	D	MD	SD
6. I feel unsettled about my future.	SA	MA	A	D	MD	SD
7. I have a personally meaningful relationship with God.	SA	MA	A	D	MD	SD
8. I feel very fulfilled and satisfied with my life.	SA	MA	A	D	MD	SD
9. I don't get much personal strength and support from my God.	SA	MA	A	D	MD	SD
10. I feel a sense of well-being about the direction my life is headed in.	SA	MA	A	D	MD	SD
11. I believe that God is concerned about my problems.	SA	MA	A	D	MD	SD
12. I don't enjoy much about my life.	SA	MA	A	D	MD	SD
13. I don't have a personally satisfying relationship with God.	SA	MA	A	D	MD	SD
14. I feel good about my future.	SA	MA	A	D	MD	SD
15. My relationship with God helps me not to feel lonely.	SA	MA	A	D	MD	SD
16. I feel that life is full of conflict and unhappiness.	SA	MA	A	D	MD	SD
17. I feel most fulfilled when I'm in close communion with God.	SA	MA	A	D	MD	SD
18. Life does not have much meaning.	SA	MA	A	D	MD	SD
19. My relation with God contributes to my sense of well-Being.	SA	MA	A	D	MD	SD
20. I believe there is some real purpose for my life.	SA	MA	A	D	MD	SD

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Appendix I Spiritual Practices Profile

ID Code # _____

Many people living with osteoarthritis experience pain, joint stiffness, and changes in physical function. We are interested in learning how you manage these symptoms. Here are some things that people may do.

1. Please respond yes or no when each item is asked.
2. If yes, indicate how often you do this? Daily, Weekly, Monthly.
3. If yes, does it work?

Item	Use		Frequency			Does it work?				
	No	Yes	Daily	Weekly	Monthly	1	2	3	4	5
1.Read religious books/scriptures	No	Yes	Daily	Weekly	Monthly	1	2	3	4	5
2.Pray	No	Yes	Daily	Weekly	Monthly	1	2	3	4	5
3.Quiet meditation	No	Yes	Daily	Weekly	Monthly	1	2	3	4	5
4.Attend services	No	Yes	Daily	Weekly	Monthly	1	2	3	4	5
5.Trust in a higher power	No	Yes	Daily	Weekly	Monthly	1	2	3	4	5
6.Take problems to a higher power	No	Yes	Daily	Weekly	Monthly	1	2	3	4	5
7.Asking for forgiveness	No	Yes	Daily	Weekly	Monthly	1	2	3	4	5
8.Listen to inspirational messages	No	Yes	Daily	Weekly	Monthly	1	2	3	4	5
9.Accept arthritis as God's will	No	Yes	Daily	Weekly	Monthly	1	2	3	4	5
10.Sharing God with others	No	Yes	Daily	Weekly	Monthly	1	2	3	4	5

11.Laugh	No	Yes	Daily	Weekly	Monthly	1	2	3	4	5
12.Remembering the past	No	Yes	Daily	Weekly	Monthly	1	2	3	4	5
13.Participate in activities with my place of worship	No	Yes	Daily	Weekly	Monthly	1	2	3	4	5
14.Attend support groups	No	Yes	Daily	Weekly	Monthly	1	2	3	4	5
15.Teach others	No	Yes	Daily	Weekly	Monthly	1	2	3	4	5
16.Use relaxation methods-listen to music, etc.	No	Yes	Daily	Weekly	Monthly	1	2	3	4	5
17.Do things to take mind off of arthritis;watch TV	No	Yes	Daily	Weekly	Monthly	1	2	3	4	5
18.Helping others with arthritis	No	Yes	Daily	Weekly	Monthly	1	2	3	4	5
19.Others_____	No	Yes	Daily	Weekly	Monthly	1	2	3	4	5
20. _____	No	Yes	Daily	Weekly	Monthly	1	2	3	4	5

Appendix J

MISSOULA-VITAS® QUALITY OF LIFE INDEX
VERSION – 15R

ID Code # _____

INSTRUCTIONS:

Examiner: Present questions verbally. Circle response. Do not show to participant.

Today's Date: _____

GLOBAL

How would you rate your overall quality of life?

1	2	3	4	5
Worst	Poor	Fair	Good	Best
Possible				Possible

SYMPTOM

1. I feel sick all the time.

-2	-1	0	1	2
Agree	Agree	Neutral	Disagree	Disagree
Strongly				Strongly

2. I am satisfied with the current control of my symptoms.

4	3	0	-3	-4
Agree	Agree	Neutral	Disagree	Disagree
Strongly				Strongly

3. Physical discomfort overshadows any opportunity for enjoyment.

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

FUNCTION

4. I am no longer able to do many of the things I like to do.

-2	-1	0	1	2
Agree Strongly	Agree	Neutral	Disagree	Disagree Strongly

5. I accept the fact that I cannot do many of the things that I used to do.

4	3	0	-3	-4
Agree Strongly	Agree	Neutral	Disagree	Disagree Strongly

6. My contentment with life depends upon being active and being independent in my personal care.

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

INTERPERSONAL

7. I have recently been able to say important things to the people close to me.

2	1	0	-1	-2
Agree Strongly	Agree	Neutral	Disagree	Disagree Strongly

8. At present, I spend as much time as I want to with family and friends.

4	3	0	-3	-4
Agree Strongly	Agree	Neutral	Disagree	Disagree Strongly

9. It is important to me to have close personal relationships.

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

WELL-BEING

10. My affairs are not in order; I am worried that many things are unresolved.

-2	-1	0	1	2
Agree Strongly	Agree	Neutral	Disagree	Disagree Strongly

11. I am more satisfied with myself as a person now than I was before my illness.

4	3	0	-3	-4
Agree Strongly	Agree	Neutral	Disagree	Disagree Strongly

12. It is important to me to be at peace with myself.

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

TRANSCENDENT

13. I have a better sense of meaning in my life now than I have had in the past.

2	1	0	-1	-2
Agree Strongly	Agree	Neutral	Disagree	Disagree Strongly

14. Life has lost all value for me; every day is a burden.

-4	-3	0	3	4
Agree Strongly	Agree	Neutral	Disagree	Disagree Strongly

15. It is important to me to feel that my life has meaning.

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

Appendix K

Approval Documents for Use of Copyrighted Materials

Life Advance, INC.

81 Front Street
Nyack, NY 10960
(845) 353-2020 ext. 6945
lifeadvance@hotmail.com
www.lifeadvance.com

July 13, 2007

Lois Kannan
1060 Chelsea Court
Vista, CA 92084-7052

Dear Mrs. Kannan:

Thank you for your order of the Spiritual Well-Being Scale Specimen Set and Spiritual Well Being Scales. Enclosed you will find the Specimen Set, which also includes one copy of the Scale in addition to your purchase of 70 copies of the Spiritual Well Being Scale. If you would like to use additional copies of the Scale in your research, please use the enclosed form to order them through Life Advance, Inc.

You are granted permission to use the Spiritual Well-Being Scale in your research. Please be aware that the Spiritual Well-Being Scale is copyrighted and may not be reproduced without expressed written consent from Life Advance, Inc., 81 Front Street, Nyack, New York, 10960.

We wish you well in your research. If you would like more information on the SWBS or Life Advance, Inc., please visit our website at www.lifeadvance.com. We are delighted to be of assistance to you and look forward to a continuing working relationship.

Sincerely,

Craig W. Ellison, Ph.D.
President

Re: MVQOLI user registration

From: **Melanie Merriman** (touchst@ix.netcom.com)
Sent: Sat 6/09/07 6:28 PM
To: lois kannan (miloketr@hotmail.com)

Thank you for your registration. ---MPM

Melanie P. Merriman, Ph.D., MBA
Touchstone Consulting
7511 Beachview Drive
N. Bay Village, FL 33141
P: 305-762-7966
F: 305-762-7191
E: touchst@ix.netcom.com

----- Original Message -----

From: lois kannan
To: touchst@ix.netcom.com
Sent: Saturday, June 09, 2007 12:52 PM
Subject: MVQOLI user registration

Dr. Melanie Merriman,

Registration information is included below regarding the use of the MVQOLI for my doctoral dissertation in nursing. The purpose of my descriptive, correlational study is to examine the relationships among symptom experience, symptom management, and symptom outcome based on spiritual well-being. Guided by the Revised Symptom Management Conceptual Model (Dodd, et al., 2001) the relationships among osteoarthritis pain, stiffness, and functional status, spiritual practices, and quality of life will be examined.

1. University of San Diego
2. University PhD program in nursing
3. Lois Kannan
1060 Chelsea Court
Vista, California 92084

(760) 941-5309

(760) 941-1356

miloketr@hotmail.com
4. Research

Dear Lois,

Thank you for your WOMAC(tm) e-form of 30th May 2006.

I note that you intend to use the WOMAC(tm) 3.1 Index to prepare a dissertation regarding spirituality and symptom self management of osteoarthritis, and that this will involve studying 68 patients over a 3 month period, with 1 visit per patient.

I would be grateful if you would please read and sign the attached Academic WOMAC(tm) User Agreement, and return the signed document to my office in Australia by fax at +61 7 3851 1559. Alternatively the signed document can be scanned and returned as an e-mail attachment.

In view of your postgraduate student status, and the fact that you intend to use the WOMAC 3.1 Index only to prepare a dissertation, Professor Bellamy is prepared to provide you with use of the WOMAC (tm) 3.1 Index and a copy of WOMAC(tm) User Guide VII, for the reduced cost of \$105.00USD plus postage and handling, which is the cost of the WOMAC(tm) User Guide VII. Any further use of the WOMAC(tm) 3.1 Index will require prior completion of the appropriate user agreement.

Please note that the WOMAC(tm) 3.1 Index is a proprietary health status questionnaire, protected by copyright and trademark, and the physical form of the WOMAC(tm) 3.1 Index should not be published or placed in the public domain in paper, electronic or any other form, neither should the index be modified in any way, or provided to unlicensed users.

I trust that these conditions are satisfactory.

Many thanks for your interest in the WOMAC(tm) 3.1 Index.

Kind regards,

Jennifer Kennedy per Professor Bellamy MD.

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