

VITA

Nathaniel Burt

EDUCATION

Indiana State University, Ph.D.	11 August 2011
Gonzaga University, M.A.	15 June 2007
Brigham Young University-Idaho, B.A.	15 May 2005

WORK EXPERIENCE

Denver Health Medical Center: Denver, Colorado • Psychology Resident	August 2010 to August 2011
Veterans Affairs, Danville: Illinois • Practicum Student	August 2009 to January 2010
Hamilton Center, Inc.: Terre Haute, Indiana • Student Therapist	March 2008 to July 2010
Rose Hulman Institute of Technology: Terre Haute, Indiana • Practicum Student	August 2009 to June 2010
Union Hospital: Terre Haute, Indiana • Practicum Student	January 2008 to August 2009
Indiana State University: Terre Haute, Indiana • Practicum Student	August 2008 to May 2009

TEACHING EXPERIENCE

Indiana State University: Terre Haute, Indiana • Counseling Practicum	Fall 2009
Gonzaga University: Spokane, Washington • Techniques of Counseling • Counseling Practicum • BASICS Counselor—Student Life	Fall 2005 to Spring 2007

HOPE AND SPIRITUALITY AND THEIR RELATIONSHIP TO THE
OVERALL QUALITY OF LIFE IN CANCER PATIENTS

A dissertation

Presented to

The College of Graduate and Professional Studies
Department of Communication Disorders and Counseling,
School, and Educational Psychology

Indiana State University

Terre Haute, Indiana

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy

by

Nathaniel Burt

August 2011

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Keywords: Hope, Spirituality, Quality of Life, Cancer

COMMITTEE MEMBERS

Committee Chair: Eric M. Hampton, Ph.D.

Associate Professor of the Department of Communication Disorders and Counseling,
School, and Educational Psychology
Indiana State University

Committee Member: Carrie Hixson Profit, Ph.D.

Associate Director for Clinical Training of the Indiana State University Student
Counseling Center
Indiana State University

Committee Member: Joseph R. Biggs, Ph.D.

Adjunct Professor of the Department of Communication Disorders and Counseling,
School, and Educational Psychology
Indiana State University

ABSTRACT

In this study, hope, spirituality, stage of cancer, age, and gender were explored as predictors of the quality of life perceived by 100 cancer patients. The instruments used were the Functional Assessment of Chronic Illness Therapy—Spirituality Well-Being, the Herth Hope Index, and the Functional Assessment of Cancer Therapy. The patients were being treated at two oncology medical centers in the mid-western region of the United States.

The main findings indicated a predictive relationship between spirituality, hope, stage of cancer, age, gender, and quality of life. A simultaneous multiple regression analysis, using quality of life as a dependent variable and spirituality, hope, stage of cancer, age, and gender as independent variables, indicated that patients with a high level of hope and spirituality and an earlier cancer stage reported having a greater quality of life. Age and gender had no significant predictive relationship with patient quality of life. Further findings indicated that spirituality and hope were positively correlated. Hope and stage of cancer, as well as spirituality and stage of cancer were found not to be significantly related, suggesting that neither hope nor spirituality significantly change as a result of the stage of cancer. The results of this study have implications concerning the relevance of hope and spirituality in the treatment of cancer patients and the impact of hope and spirituality on cancer patients' perceived quality of life.

ACKNOWLEDGMENTS

I would like to thank the many people who have supported me throughout my graduate program. I would like to extend my gratitude especially to my dissertation committee, Dr. Hampton, Dr. Profitt, and Dr. Biggs, who have been extremely helpful and generous with their time and talents. I would like to thank my classmates, with whom I have spent so much time, for the support and encouragement we were able to give each other. I give a special acknowledgment to the professors, faculty, teachers, and supervisors who have challenged me and who knew of my potential.

I am thankful for my loving parents, Jeff and Claudette Burt, and parents-in-law, Mark and Laurie Dooley, who have blessed my life with their compassion, love, and many prayers on my behalf. Also, I cannot forget my dear companion and children who have supported me throughout my education and during the times when I felt overwhelmed by the restraints of graduate school.

I would also like to acknowledge the patients who participated in this study. This project would not have been possible without their help. Additionally, I thank the administrative faculty at the hospitals where I collected data for their time and advocacy, allowing me access and opportunity to complete my research.

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CHAPTER 1

INTRODUCTION

The National Cancer Institute estimates that there are more than 10 million Americans now living who have a history of cancer (American Cancer Society, 2008). Some of these individuals are still undergoing treatment, while others are now cancer-free or in remission. Presently, one person in three will be diagnosed with cancer during his or her lifetime (American Cancer Society, 2008).

However, advances in treating and curing cancer have increased over the past half-century. During the 1960s, 35% of individuals diagnosed with cancer survived, but by the 1990s this number had improved to 60% (American Cancer Society, 1998). As of the 2008 report from the American Cancer Society, the five-year relative survival rate is approximately 85%. Medical advancements and early treatment options have increased the life span for oncology patients and have inspired doctors and cancer patients alike to search for treatments which produce fewer adverse side effects and physical problems (Holland, 1989b; Zimpfer, 1992). For example, early-stage prostate cancer patients are opting for “external beam radiation” to treat the cancer in early stages of the disease, while “watchful waiting” rather than immediate treatment is better for some patients with more benign tumors, especially for those who have more health related problems and for those who are older.

Cancer and other chronic illnesses impact major areas of patients' lives, including psychological, physical, and social functioning (Ekman, Fagerberg, & Lundman, 2002). These illnesses often are associated with chronic pain, functional limitations, and disability, all of which contribute to poor health-related quality of life (Centers for Disease Control and Prevention, 2008). Improving patients' quality of life during and after treatments is becoming a driving focus and concern for practitioners all over the world (Aaronson, Cull, Kaasa, & Sprangers, 1994; Puterman & Cadell, 2008) and has contributed to the development of the field of psychosocial oncology (Holland 1992, 2004).

Psychosocial oncology combines medical analysis and practice as they relate to psychology and oncology. Holland (1998) explained psychosocial oncology as a holistic view of cancer and its impact on the individual. Practitioners are concerned with the impact of cancer on a person's emotional health as well as the behavioral and social factors that may have an effect on the disease process of cancer. This concern about an individual's psychosocial well-being is important in that behavioral and psychological characteristics can have an impact on mortality and morbidity in patients with cancer (Holland, 1989b; Puterman & Cadell, 2008). The practitioner philosophy of how to deal with cancer's impact on the individual has changed in the past half century from an initial preoccupation with response rates, disease-free survival, and curability to a newer interest in expanding the patients' overall quality of life (Cella, 1994; Gatuszka, 2006).

Statement of the Problem

Quality of life can be thought of as a multidimensional construct which reflects patients' assessment of their current level of functioning in a variety of areas of their lives (Levin, Li, Riskind, & Rai, 2007; Safaee, Moghimi-Dehkordi, Zeighami, Tabatabaee, & Pourhoseingholi,

2008; Tope, Ahles, & Silberfarb, 1993). It also refers to a general well-being that does not merely represent the absence of disease or illness (Zimpfer, 1992). “It is best understood as representing the gap between one’s actual functional level and one’s ideal standard. Patients who are able to adjust their expectations in duress are also able to adapt better to their illness and treatment” (Cella, 1994, p. 187).

While there has been an increased interest in the quality of life of oncology patients, there has also been an increased awareness of the impact that hope and spirituality have on patients suffering from a cancer illness. Researchers have hinted that hope and spirituality are essential and positive aspects of patients’ cancer experience (Hendricks-Ferguson, 2006; Koenig, 1997; Miller, 1997; Tope et al., 1993). For individuals coping with cancer, hope is consistently cited as a significant psychosocial resource (Hendricks-Ferguson, 2006). Additionally, spirituality is now being recognized as a source for healing by medical practitioners in general (Matthews, 1997). Researchers indicate that patients want their spirituality and other significant values, such as hope, to be addressed as important aspects of their health care and treatment. Although the many aspects and characteristics of quality of life offer a broad understanding of a cancer patient’s experience, hope and spirituality are often overlooked. The present study examined hope and spirituality and their relationship to quality of life in cancer patients.

Additional variables that were examined were age, gender, and stage of cancer. Studies of these variables and their relationship with quality of life have had mixed results. Some research data show that age is positively correlated to quality of life in cancer patients—the older the patient is the greater quality of life he or she reports having (Payne, 1992; Roberts, Rossetti, Cone, & Cavanagh, 1992). On the other hand, other researchers have not found any relationship, positive or negative, with age and quality of life (Esbensen, Roer, Osterlind, & Hallberg, 2004).

In addition, research on gender differences in quality of life satisfaction have also had mixed results, with some researchers suggesting that women report higher quality of life compared to men (Schag, Ganz, Wing, Sim, & Lee, 1994), while other researchers (Stanton, Danoff-Burg, & Huggins, 2002) have shown the opposite. The research on the stage of cancer as it relates to quality of life has also demonstrated mixed results (Edgar, Rosberger, & Nowlis, 1992; Litwins, Rodrigue, & Weiner, 1994). Therefore, stage of cancer (i.e, stage one, two, three, and four), age, and gender were assessed in this study for significant relationship with quality of life in cancer patients.

Purpose of the Study

The purpose of this study was to determine whether levels of hope and spirituality are positively correlated and predictive of quality of life in cancer patients. In addition to assessing hope and spirituality, age, gender, and stage of cancer were studied in order to understand their relationship to the quality of life in cancer patients.

Importance of the Study

After many years of disregard, supportive care is beginning to be recognized for its importance and necessity in improving patient care. Included in this recognition is the need to make more explicit the long-held belief within the medical profession that no goal can rationally be more important than optimal functioning and well-being in patients' overall quality of life (Cella, 1994). With improved treatment options and increased survival rates (American Cancer Society, 2008) for cancer patients, there has been an increased interest in patients' overall quality of life, meaningfulness, and life satisfaction (Levin et al., 2007; Costain, Hewison, & Howes, 1993). Interest in hope and spirituality have increased as well, as they have been recognized as resources for healing that have been underutilized in past treatment with cancer patients (Hu &

Gruber, 2008; Matthews, 1997). As fundamental and positive parts of cancer patients' experience (Fitchett, Peterman, & Cella, 1996; Koenig, 1997; Meraviglia, 2004), hope and spirituality may also be important elements of patients' quality of life. The finding of this study that these aspects are significantly related to quality of life, further support the importance of addressing them within a clinical setting.

Hypotheses

The primary hypothesis for the present study was that cancer patients' level of hope and spirituality are positively related to and predictive of patients' overall quality of life. It was also postulated that age, gender, and stage of cancer have an impact on quality of life. Based on previous research in the area, it was predicted that older age, earlier stages of cancer, and being a woman are positively related to patient's global quality of life.

CHAPTER 2

LITERATURE REVIEW

A severe or prolonged medical illness may lead individuals to ponder the meaning and significance of their lives. This may contribute to a change or rearrangement of the individual's life and priorities (e.g., discovering new hobbies or talents or focusing on immaterial values). For that same reason, chronic illness such as cancer may also have a positive and developmental aspect (Gatuszka, 2006).

Quality of life is a fascinating concept that is gaining more attention, yet in the past it has been described in vague and abstract terms with many interpretations (Cella, 1994; Schipper & Levitt, 1985). Many disciplines utilize the concept of quality of life to mean the "goodness" of life (Badger, 2001; Cummins, McCabe, Romeo, & Gullone, 1994). This goodness view of quality of life has been studied from various perspectives to ascertain what variables promote improvements in life. Various demographic variables have been thought to influence general quality of life: marital status (with married individuals reporting higher satisfaction and overall quality of life compared to separated, divorced, single, and widowed individuals), education (higher education being associated with greater quality of life), income (individual who classify themselves as middle class or higher reporting higher quality of life levels compared with individuals with lower economic status), and spirituality (based on factors such as religiosity, prayer, belief in a Deity, and church attendance, with greater participation in these activities

being associated with greater quality of life) (Safaei et al., 2008; Zautra, Beier, & Cappel, 1977). Social indicators such as quality of health, housing and material objects, social welfare, and public safety are used in other fields of study and by various organizations to judge quality of life in individuals (Baker, Curbow, & Wingard, 1992). Although satisfaction and involvement in society have been shown to influence perceived quality of life at the community level, personal variables seem to have a stronger relationship to an individual's quality of life. Personal variables include unique aspects of oneself, employment, and family support (Bruscia, Shultis, Dennery, & Dileo, 2008). Consistent with this perspective, Muthny, Koch, and Stump (1990) reported that common life variables relevant to quality of life include leisure, work, financial status and situation, employment, family relationships, health, physical and social surroundings, and meaning. Muthny et al. found that good health, supportive family and peer relationships, and steady employment and income all contribute to higher satisfaction levels and quality of life in individuals.

In addition to the attention quality of life has received from other disciplines and professions, it has also been studied and examined in the medical profession (Levin et al., 2007; Muthny et al., 1990; Rejeski & Shumaker, 1994). *Health-related quality of life* is the term that the medical profession often uses. While quality of life in general pertains to the overall view of life (i.e., psychological, biological, social, interpersonal, ecological, and economical), health-related quality of life has to do with the quality of life as it is influenced by illness or disease (Badger, 2001). The quality of life discussed throughout the remainder of this study will refer to health-related quality of life.

The definition of quality of life within psychosocial oncology has been widely debated (Badger, 2001; Cella, 1994; Holland, 1992; Montgomery, Pocock, Titley, & Lloyd, 2002; Tope,

et al., 1993; Zimpfer, 1992). Professionals from all over the world assembled at various conferences in the early 1990s to discuss and come to some agreement on the definition and meaning of the term (Aaronson et al., 1994). Generally, quality of life is a subjective term used to describe patients' overall experience of their illness concentrating on patients' personal evaluation and satisfaction and its relationship to their current level of functioning in multiple areas of their lives (Badger, 2001; Cella, 1994; Holland, 1992). The levels of functioning are analyzed and compared with ideal and preferred levels of functioning. Differences between the two indicate deficiencies and areas of need (Bruscia et al., 2008; Calman, 1984; Cella, 1994). However, quality of life is an ever-changing variable, making it difficult to assess. Individuals' assessment of their quality of life changes to some degree on a regular basis, and their interpretation of certain events and experiences will reflect these changes as they evaluate their quality of life and overall satisfaction.

Quality of life has been found to be related to a number of variables in cancer patients. For those who have battled cancer for a long period of time, predictors of quality of life include meaningful relationships with a spouse, partner, or children, having sufficient financial resources, and having survived more difficult and cumbersome parts of the illness (Bruscia et al., 2008). For patients who are in later stages of cancer and who have chronic pain, the affective elements of pain and degree of suffering and relief are significant predictors of quality of life (Polomano, 2006). In men with prostate cancer, self-esteem, social support, and health locus of control are important factors in predicting quality of life (Rondorf-Klym & Colling, 2003). In women with lung cancer, disturbance in social and psychological aspects of quality of life was related with negative perceptions and depression (Sarna et al., 2005).

Some authors have attempted to focus the range of quality of life solely on the patients' cognitive and affective responses (McKennell & Andrews, 1983). This, however, restricts the scope of patients' expression of their experience. Even though quality of life does include individuals' cognitive and affective responses, their physical and functional abilities are also important. Professionals have discussed the importance of four components of patients' quality of life: social well-being, functional well-being, physical well-being, and emotional well-being (Aaronson et al., 1994; Anderson, Kiecolt-Glaser, & Glaser, 1994; Bruschia et al., 2008; Cella, 1994; Costain et al., 1993; Montgomery et al., 2002; Tope et al., 1993; Zimpfer, 1992). Other authors have discussed the significance of additional areas in life such as employment and occupation (Schipper, 1990), spirituality (Fitchett et al., 1996; Tope et al., 1993; Weaver & Flannelly, 2004), image of self and sexual functioning (Singer-Kaplan, 1992), and hope (Sanatani, Schreier, & Stitt, 2008). Cella (1998) reported that quality of life can be viewed as encompassing seven dimensions of a patient life: (a) treatment satisfaction, (b) physical concerns, (c) sexuality/intimacy, (d) functional ability, (e) emotional well-being, (f) family well-being, and (g) social functioning. Although these areas have been considered by various researchers, they are not as widely accepted as the four dimensions of social, functional, physical, and emotional well-being.

The general consensus concerning quality of life of oncology patients is that it is a multidimensional construct which incorporates and explains patients' social, functional, physical, and emotional well-being (Aaronson et al., 1994; Anderson et al., 1994; Cella, 1994; Costain et al., 1993; Montgomery et al., 2002; Tope et al., 1993; Zimpfer, 1992). These dimensions explain different but also related aspects of a patient's life (Cella, 1994). Each will be addressed and discussed in detail below.

Quality of Life Dimensions

Social Well-Being

According to Cella (1994), social well-being is a more difficult concept to define than the other dimensions of quality of life. It refers to individuals' perceived social support, intimacy, and relationships with friends and family members. Social well-being also encompasses leisure activities, family functioning, and sexuality (Cella, 1994; Holland, 1992; Tope et al., 1993). Schipper (1990) viewed social well-being slightly differently, defining it as social functioning which explains a patient's ability to maintain and keep up with social responsibility and entailing the "desire for and ability to make contact with other individuals and be a part of the community" (p. 174). Social functioning may be considered a part of social well-being in that it describes patients' aspirations and aptitudes to actively engage in social activities rather than their perceived social support networks. The distinct perspectives by researchers on social well-being contribute to the difficulty of assessing it, compounded by the fact that most quality of life assessments lack enough emphasis in addressing social well-being or fail to address it at all (Cella, 1994; Muthny et al., 1990). Nevertheless, the social and societal aspect of quality of life is vital because just as functional and physical changes occur in consequence to illness, social changes and adaptations occur as well. Recognizing the need to understand and attend to these social changes in overall quality of life was a major paradigm shift in the 1980s (Holland, 1992) and continues to gain importance and prevalence today (Bruscia et al., 2008).

Physical Well-Being

Physical well-being refers to significant or perceived bodily changes or disruptions (Cella, 1994). In particular, it encompasses pain, fatigue, nausea (Cella, 1994; Friedman et al., 2005; Schipper & Levitt, 1985), changes in body weight and size, hair loss, susceptibility to

infection, and a multitude of other physical alterations or emotions (Singer-Kaplan, 1992). Many authors have addressed the physical characteristics of cancer and its associated treatments (Cella, 1994; Dollinger, Rosenbaum, & Cable, 1991; Friedman et al., 2005; Holland 1989a; Singer-Kaplan, 1992). Prior to formal diagnosis by a physician, patients are often aware of subtle and not so subtle changes in physical appearance. Physical changes may result directly from the cancer or tumor, from the side effects of the treatment used to fight the cancer, or from a combination of both the cancer and the treatment (Cella, 1994; Greisinger, Lorimor, Aday, Winn, & Baile, 1997). Understanding the direct link between physical abnormalities and the cancer or treatment is often difficult or nearly impossible. The region or area of pain and discomfort is of interest to both the oncologist as well as the patient (Cella, 1994). Once patients become aware of the physical abnormalities or limitations, they can then understand the impact that the cancer will have on functional abilities and well-being.

Functional Well-Being

Functional well-being was one of the initial domains used to measure patients' quality of life (Costain et al., 1993), but it alone was unable to capture the complete quality of life since the other three domains were not assessed (Schipper & Levitt, 1985). Functional well-being is a fundamental aspect of overall quality of life and pertains to a wide range of abilities and behaviors that are influenced by cancer on a daily basis.

Functional well-being may be confused with physical well-being because they have many similarities and are closely related. Nevertheless, each characteristic has its own empirically separate domain (Cella, 1994; Costain et al, 1993). Functional well-being has to do with patients' "ability to perform the activities related to one's personal needs, ambitions, or social roles" (Cella, 1994, p. 188). It is the individual's ability to perform certain tasks for him or

herself and for others (Schipper & Levitt, 1985). The distinction between functional well-being and physical well-being becomes more comprehensible when considering that individuals can still go to their place of employment or attend social activities even though they are experiencing pain and discomfort (Cella, 1994). It is possible to measure and analyze cancer patients' functional well-being by comparing their daily activities and routines to the activities and abilities of individuals in good physical health and those without illness (Costain et al. 1993; Greisinger et al., 1997). Rustoen and Hanestad (1998) reviewed various types of functioning such as mobility (e.g., indoors, outdoors, within society), self-care activities (e.g., bathing, eating, dressing), physical activities (e.g., walking, jogging, exercising), leisure activities (e.g., sports, hobbies), and role activities (e.g., school, work). From their analysis, Rustoen and Hanestad found significant differences on level of functioning satisfaction and ability to perform certain activities between individuals who reported higher levels of functioning and health and those who reported lower level of functioning and health.

Emotional Well-Being

Emotional well-being is related to yet separate from physical well-being (Hays & Stewart, 1990). Emotional well-being incorporates both negative and positive affect experiences by the patient (Cella, 1994). The term includes affective experiences such as fear, anxiety, and depression, which are all parts of the patient's cancer experience (Badger, 2001; Chochinov, 2003; Schipper, 1990). Responses and reactions that patients have to their cancer illness are very important because of the relationship and impact they have on the overall perceived quality of life (Davies, Kinman, Thomas, & Bailey, 2008; Newsom, Knapp, & Schultz, 1996). For example, maladaptive thoughts, beliefs, and other cognitive distortions contribute to a patient's emotional well-being, with the continuance of chronic illness contributing to poorer emotional

health (Levin et al., 2007). Levin et al. (2007) concluded that although cognitions and affect comprise components of global quality of life, they in themselves are not broad enough to encompass the overall quality of life in cancer patients. McKennell and Andrews (1983) found affect and cognitions to be complete factors in quality of life; however, it should be noted that their results were acquired post hoc from a previously available data set developed 10 years prior to their analysis. In addition, the survey they used was focused on affect and cognitions without expanding the scope to explore the participants' functional and physical well-being. Although affect and cognitions do not by themselves comprise the global quality of life, they account for an element of it. Emotional states may also lead to diagnosable psychological problems that require attention and treatment from a mental health professional (Hu & Gruber, 2008; Nicolas, Borman, Donaghy, Minear, & Vrochopoulos, 1997; Tope et al., 1993). Awareness of patient mental health status is important because, although the prevalence of other psychological disorders remains the same as among the general population, approximately 35% of all cancer patients develop an adjustment disorder resulting from the significant stressors caused by their cancer diagnosis and treatment regimens (Nicolas et al., 1997; Tope et al., 1993). Awareness of increased susceptibility of patients for psychological disorders is critical. Cancer may exacerbate psychological problems or, conversely, psychological disturbances may exacerbate cancer (Hu & Gruber, 2008; Ekman et al., 2002; Husted, Gladman, Farewell, & Cook, 2001). Once psychological disturbances are detected, treatment and interventions can be used to alleviate anxiety, depression, or adjustment to the cancer (Newsom et al., 1996). Most cancer patients adjust well to psychological interventions and treatments (Anderson et al., 1994).

In summary, all four domains of quality of life (social well-being, physical well-being, functional well-being, and emotional well-being) are affected by cancer. For example, lowered

physical abilities contribute to diminished functional abilities, such as ability to work, which may then alter social and emotional well-being. Each component of this multidimensional model is important because it offers a clear picture of the day-to-day aspect of a patient's overall quality of life (Cella, 1994). Being able to distinguish between particular components of quality of life and their possible relationship to the overall quality of life is important so that appropriate attention can be given to the dimensions that are negatively impacting the individual's overall quality of life and satisfaction. Practitioners can then address these areas more specifically and assist in alleviating problems in those particular domains (Cella, 1994; Tope et al., 1993).

Quality of Life Assessment in Cancer Patients

Research concerning quality of life continues to develop and expand because of the lengthening of patients' lives due to improved treatments and interventions as well as increasing awareness that quality of life impacts multiple aspects of patients' cancer experience. In addition, symptoms and survival rates are no longer considered sufficient criteria to measure the effects of medical treatment (Strain, 1990). Further growth in oncology has been stirred by the stagnation of progress in cancer therapy after a series of new successful treatments (Muthny et al., 1990).

Clinically, quality of life provides a measure with which to assess the success or impact of various cancer treatments (Schipper & Levitt, 1985; Tope et al., 1993). Knowledge about treatment effects on each component of quality of life allows clinicians to change and adapt treatments that may result in higher quality of life (Bruscia et al., 2008; King et al., 1997). Though a cure is not always possible, patients still relish the opportunity to choose their course of treatment based on what will most influence their overall quality of life. Information regarding patients' quality of life shows that some individuals would rather choose treatments

that preserve normal functioning than treatments that are radical in nature, even though this decision may reduce survival time significantly (Schipper & Levitt, 1985). Patients experience some degree of difficulty or discomfort (e.g., emotional, physical) regardless of the treatment type. However, this can often be addressed pharmacologically (Aaronson, 1991) or therapeutically (Tope et al., 1993).

Knowledge about the different components of quality of life can assist patients in obtaining a clear picture of what their cancer experience may be like. This knowledge may also contribute to increased collaboration between patient and practitioner regarding making decisions about what treatment model to use. This participation in decision making allows the patient to feel more in control concerning treatment options and may lead to improved psychological health as it relates to cancer and interventions (Husted et al., 2001; Tope et al., 1993). Furthermore, increased patient participation, treatment expectancies, and some sense of control may lead to a decrease in treatment compliance issues. Currently, lack of treatment conformity diminishes patient recuperation and confounds results from clinical trials (Schipper & Levitt, 1985). With continued patient awareness and participation in decision making, more patients may be willing to complete treatment trials. Quality of life assessment provides pertinent and appropriate information for practitioners and patients. Therefore, it is necessary that quality of life be addressed to make certain that the most appropriate treatment for each patient is being used.

Criteria for Global Quality of Life Assessments for Cancer Patients

Quality of life assessment has many applications and is prevalent in the study of cancer. As mentioned previously, advantages of assessment include providing feedback and norms for patients' quality of life at various stages of cancer and for specific domain information

(Aaronson, 1991; Tope et al., 1993). Other advantages include analyzing treatment options and improving intervention techniques as well as strengthening the patient—clinician partnership in making important decisions (Schipper & Levitt, 1985; Tope et al., 1993). A number of criteria for assessing quality of life have been described throughout the literature. The most commonly noted criterion is that the assessment should be a measure that can be self-administered by the patient (Cella, 1994; Costain et al., 1993; Schipper, 1990).

Quality of life assessment has been defined in the literature as the subjective and holistic evaluation of life as well as the patient's appraisal and satisfaction with current level of functioning compared with his or her ideal level of functioning (Lehto, Ojanen, & Kellokumpu-Lehtinen, 2005; Safaee et al., 2008). Initially, quality of life was predicted by the evaluation and personal assessment of doctors, but these predictions and estimations were found not to be significantly correlated with the ratings and evaluations given by the patients themselves (Aaronson et al., 1994). Self-administration is therefore an important factor in assessing quality of life due to its subjective nature (Aaronson et al., 1994). Subjectivity refers to the notion that quality of life can only be understood through the patient's perspective. Like pain, which is thought to have subjective components, quality of life can only be assessed effectively by asking the patient about it directly. Efforts to estimate patients' quality of life by evaluating their overt behaviors have not succeeded because doing so neglects the underlying cognitive processes that mediate patient perceptions of quality of life (Cella, 1994). Objective measures might allow an observer, such as a clinician, to assess the patient's quality of life, but failing to integrate the subjective appraisal of the patient leads to an inaccurate and incomplete understanding. Therefore, quality of life assessments should include patients' internal and personal feelings (Baker et al., 1992).

In self-reporting, patients' personal experiences concerning the impact of cancer on their quality of life is assessed. Assessing an individual's quality of life by observable behavior neglects the social and emotional components which may have substantial effect on the global quality of life (Aaronson et al., 1994; Cella, 1994). Self-reporting is also important in that it stems from the broader issue of constructivism (Mahoney & Lyddon, 1998). From a constructivist perspective, personal reports and analysis would be the most prudent method to obtain information about quality of life because individuals create their own personal realities. According to Mahoney and Lyddon (1998), individuals actively shape their interpretations and understanding of their world. Self-administered measures also allow patients to participate more actively in the treatment decision and evaluation process (Aaronson, 1991; Costain et al., 1993; Schipper, 1990).

A second criterion for a quality of life measure is the potential for variability and differences in scores among cancer patients. In other words, differences in cancer types should allow for differences between cancer patients. The measure should also be sensitive to dysfunction within a certain type of cancer (Aaronson, 1991; Schipper & Levitt, 1985). Thus, the measure would contain questions that refer to the patient's particular type of cancer as well as a core set of questions referring to the cancer experience in general (Costain et al., 1993). In addition, each component should consist of multiple items yet be brief enough to be completed in approximately 10 minutes (Aaronson, 1991; Aaronson et al., 1994).

In addition to being self-administered and having variability in patient scores, a third important criterion for a quality of life measure is that it should be able to assess each of the four global quality of life components (Cella, 1994; Safaee et al., 2008). Bearing in mind that global quality of life has been explained in the literature as a multidimensional concept incorporating

social well-being, physical well-being, functional well-being, and emotional well-being, all of the components need to be integrated into the measure (Aaronson et al., 1994; Cella, 1994; Safaee et al., 2008). Instruments that fail to assess the four multidimensional domains are only partial measures of quality of life, not global measures of quality of life.

An additional criterion for a quality of life measure is that the measure should be valid and reliable. Reliability insures that patients' global quality of life may be tracked throughout their cancer experience (Aaronson, 1991; Schipper & Levitt, 1985). Finally, items should be written at a moderate reading level for easy interpretation by the patient, which will lead to higher completion rates (Schipper & Levitt, 1985).

Current Quality of Life Measures

A large number of quality of life instruments have been developed. Many of the instruments are based on very different conceptual ideas, definitions, operationalizations, and theoretical backgrounds, thus leading to the exclusion or inclusion of important areas and domains of life and to different preferences concerning objective and subjective information (Muthny et al., 1990). Even though it is generally agreed that quality of life is a multidimensional construct (Anderson et al., 1994; Cella, 1994; Costain et al., 1993; Safaee et al., 2008), many authors discuss global quality of life although they have assessed only three or fewer components. For this reason, there have been mixed results in studies of quality of life (Costain et al., 1993). For example, McKennell and Andrews (1983) assessed patients' affective and cognitive processes only and based their global quality of life solely on that information. They failed to obtain a complete picture of the patients' satisfaction and overall quality of life. Further, certain instruments are reported to measure one specific area of quality of life, yet they have many questions or full subscales that touch on but do not completely assess other areas

(Costain et al., 1993; Greenwald, 1987). These types of inconsistencies in quality of life assessment impact the total score on the measure and consequently do not accurately represent the quality of life it claims to assess (Costain et al., 1993). One such measure is the Profile of Mood States (POMS; Pollock, Cho, & Reker, 1979). The POMS measures the emotional component but also includes scales that assess fatigue and physical components without fully representing the areas through sufficient questioning. In order to prevent confusion about whether an instrument is assessing global or specific components of quality of life, they should not be discussed interchangeably.

Partial measures are often used and may continue to be used when they are clearly stated as partial measures meant to assess specific areas of a patient's quality of life (Cella, 1998). Of importance in this review are measures that do assess all four components of quality of life as mentioned previously: physical well-being (PWB), functional well-being (FWB), social well-being (SWB), and emotional well-being (EWB). Even within these multidimensional instruments, some fall short of meeting all the criteria for a strong global quality of life instrument. For example, the Cancer Rehabilitation Evaluation System (CARES; Schag & Heinrich, 1990) consists of 139 questions, failing to meet the criterion for brevity for an appropriate assessment. Even the authors have acknowledged that the instrument is long and time-consuming. The CARES-SF was later created and consists of only 59 questions, allowing for faster completion and more completed assessments (Schag, Ganz, & Heinrich, 1991). See Table 1 for an abbreviated list of quality of life instruments.

Another instrument that does not satisfy all the criteria previously suggested is the Spitzer Quality of Life Index (QL-INDEX; Spitzer et al., 1981). The QL-INDEX was designed for the physician's assessment of the patient quality of life rather than as a self-administered and

Table 1

Partial and Global Quality of Life Measures for Cancer Patients

Measure	PWB	FWB	SWB	EWB	Self-report	Core	Site	Multi-items	Brief	Reliable	Valid
CARES	X	X	X	X	X	X		X		X	X
CARE-SF	X	X	X	X	X	X		X	X	X	X
EORTC-QLQ30	X	X	X	X	X	X	X+	X*	X	X	X
FACT	X	X	X	X	X	X	X	X	X	X	X
FLIC	X	X	X	X	X	X		X	X	X	X
IDS	X	X	X	X	X	X		X	X	X	X
KPS		X							X	X	X
LASA	X	X	X	X	X	X	X++	X	X	X	X
MPQ	X			X	X	X		X**	X	X	X
POMS	X			X	X	X		X	X	X	X
SIP	X	X	X	X	X	X		X		X	X
QL-INDEX	X	X	X	X	X	X			X	X	X

Note. Adapted from Aaronson et al., 1993; Cella et al., 1993; Costain et al., 1993; Kornblith & Holland, 1994; and Schipper & Levitt, 1985. *Quality of Life Components:* physical well-being (PWB), functional well-being (FWB), social well-being (SWB), and emotional well-being (EWB); *Self Report:* As reported by the patient; *Core:* Core set of questions; *Site:* Set of site specific questions; *Multi-items:* Several items per component assessed. + Site specific questions available for lung cancer patients only. ++ Site specific questions available for breast cancer patients only. * Only two items for SWB component. **Only one item for EWB component. CARES = Cancer Rehabilitation Evaluation System (Schag and Heinrich, 1990); CARES-SF = Cancer Rehabilitation Evaluation System - Short Form (Ganz et al., 1993); EORTC-QLQ30 = European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (Aaronson et al., 1993); FACT = Functional Assessment of Cancer Therapy (Cella et al., 1993); FLIC = Functional Living Index – Cancer (Schipper & Levitt, 1985); IDS = Illness Distress System (Noyes et al., 1990); KPS = Karnofsky Performance Status (Karnofsky & Burchenal, 1949); LASA = The Linear Self Assessment System (Selby, Chapman, Etazadi-Amoli, Dalley, & Boyd, 1984); MPQ = McGill Pain Questionnaire (Melzack, 1975); POMS = Profile of Mood States (Pollock et al., 1979); SIP = Sickness Impact Profile (Bergner, Bobbitt, Carter, & Gilson, 1981); QL-INDEX = Quality of Life Index (Spitzer et al., 1981).

reported instrument. The measure also only consists of five questions, which when put together are supposed to assess global quality of life of the patient. It is deficient in having multiple items for each component of quality of life and fails to provide enough variability in the scores so that differences can be detected among patients with different types of cancer. These limitations should be considered when selecting a global quality of life measure. Other than these two instruments, the remaining instruments listed in Table 1 meet the criteria for a global quality of life assessment. However, many of these make no reference to the patient's specific type of cancer.

Of all the measures reviewed, only two meet all the criteria, as described by Cella (1994) and Levin et al. (2007), for a strong global quality of life assessment for cancer patients: the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC-QLQ30; Aaronson et al., 1993) and the Functional Assessment of Cancer Therapy (FACT; Cella et al., 1993). The Linear Self Assessment System (LASA; Selby et al., 1984) also meets the criteria for a strong quality of life assessment, but it is individualized for breast cancer patients. The EORTC-QLQ30 and FACT measures were designed with a general core set of questions for cancer as well as a subscale that refers to the patient's particular type of cancer. Furthermore, only the FACT offers site specific questions for several sites. While the EORTC-QLQ30 offers a subscale for lung cancer in particular, the FACT offers subscales for breast, lung, bladder, head and neck, colorectal, ovarian, and prostate cancers (Kornblith & Holland, 1994).

The FACT (Cella et al., 1993) is a global quality of life assessment that measures the four multidimensional components previously mentioned, and it meets all the criteria for a strong

global quality of life assessment (i.e., reliability and validity, simple language, variability in scores, and brief self-report measure).

Additional Aspects of Patient Quality of Life

Having reviewed the literature concerning cancer patients, it is interesting to note that there is rising interest in other aspects of patients' lives regarding their overall quality of life. For example, self-image, sexual satisfaction (Aronson, 1991; Singer-Kaplan, 1992) and occupational concerns (Montgomery et al., 2002; Schipper, 1990) have all been addressed as important parts of patients' lives. However, these aspects fall under the umbrella of the other components. For instance, self-image is associated with the emotional well-being component, occupational issues with the functional well-being component, and sexual concerns with social well-being. Quality of life aspects such as hope and spirituality, however, do not tend to fit comfortably under any of the four previously mentioned components. Most commonly used quality of life assessments in cancer research fail to include hope or spirituality components, even though many researchers have argued for their inclusion because of the relevance and importance they have for patients (Brady, Peterman, & Fitchett 1999; Mytko & Knight, 1999). For this reason, hope and spirituality were assessed in the present study to determine whether they have a positive predictive relationship with global quality of life. Other variables that the literature indicates may be related to patient quality of life are age, gender, and stage of cancer. Because results concerning these variables have been mixed, these variables will also be examined in this study for their relationship with quality of life.

Spirituality

Patients often report that, although the physical effects of their illness were assessed and reassessed throughout their medical care, the existential, familial, emotional, and spiritual

aspects of their illness rarely received focus or concern (Greisinger et al., 1997). Quality of life has become progressively more important to patients suffering from cancer as advances in treatments have prolonged their length of survival. Although relatively few researchers have looked at the relationship between quality of life and spirituality (Weaver & Flannelly, 2004), many of the studies show evidence that spirituality contributes to positive psychological adjustment to cancer and its treatments.

Spirituality is abstract and difficult to define; nevertheless, many have tried to capture the essence of the elusive term. Spirituality has been described as an immaterial aspect of human nature that never dies (Meraviglia, 2004). It has also been referred to as an inner state of being or the force within an individual (Goldsmith, 1992). An individual with high levels of spirituality has been characterized with various traits such as hope, trust, morals, awareness, value, honesty, simplicity, acceptance, courage, integrity, openness, gratitude, gentleness, love, energy, and forgiveness (Miller, 1997; Post, 1997). Researchers have attempted to measure spirituality by operationalizing it in concepts such as spiritual health, spiritual well-being, quality of life, and spiritual perspective (Meraviglia, 2004). Spirituality has also been defined as the expressions and experiences of an individual's spirit in unique and dynamic practice reflecting faith in a Supreme Being, integration of the dimensions of mind, body, and spirit and connectedness with self, others, nature, or God (Meraviglia, 1999). Spirituality has been thought to include beliefs and values as well as community support from other spiritual and religious individuals (Holland, 1998). It can be viewed as a clear sense of meaning or purpose in life (Miller, 1997) and incorporates finding satisfactory answers to questions concerning illness, death, and the meaning of life (Ellerhorst-Ryan, 1988).

Even though spirituality has often been associated with religion and church attendance, it does not necessarily pertain to religion, nor is it limited to religiosity. Religion describes a formal institution, whereas spirituality describes an inner state of being (Beck, 1986; Post, 1997; Weaver & Flannelly, 2004). Miller (1997) explained spirituality as a “transcendent dimension outside of material existence, one that can definitely be experienced, but never bound, controlled, or possessed” (p. 39). On the other hand, Miller described religion as “defined by its boundaries, by beliefs, practices, and structures” (p. 39). The search for purpose and meaning in life is not limited to the spiritual values embodied in formal religions or in other forms of faith. Each person has core beliefs about the nature of his or her own existence, and these beliefs are not always suggestive of a Supreme Being (Brennan, 2006). Millison and Dudley (1992) supported the notion that spirituality and religion are related but separate concepts. In their study, hospice caregivers rated themselves as being more spiritual than religious, indicating that individuals perceive some difference between spirituality and religion.

Spirituality may be developed through non-religious activities and exercises. Various activities such as meditation and relaxation have been shown to increase individual spiritual experiences (Kass, Friedman, Leserman, Zuttermeister, & Benson, 1991; Weaver & Flannelly, 2004). Additional exercises that are frequently used to enhance spirituality include visual imagery, introspection, and belief in something greater than oneself (Alcoholics Anonymous, 1976; Greisinger et al., 1997). Prayer and religious studies may also enhance spirituality (Kass et al., 1991; Meraviglia, 2004). Spirituality can also be influenced and affected by an individual’s religious beliefs and is often fostered within the context of religion. It incorporates the experiences, perspectives, and insights that one has with other people as well as with a higher

power (Post, 1997). According to Fitchett et al. (1996), spirituality comprises two significant components: meaning or purpose of life and faith.

Meaning and Purpose

Spirituality and the concept of meaning of life are interrelated (Zimpfer, 1992), and individuals often search for some meaning in their lives after having experienced a traumatic event such as being diagnosed with cancer (Jim, Richardson, Golden-Kreutz, & Anderson, 2006; Thompson & Pitts, 1993). Cancer is a life-changing illness that often challenges individuals' views of the world, themselves, and their future. A number of common themes can be seen in these existential changes including vulnerability, depression, uncertainty, helplessness, fear, isolation, shock, and the search for meaning and hope (Epping-Jordan et al., 1999; Halldorsdottir & Hamrin, 1996; Moadel et al., 1999). Patients often look for meaning to help them understand their cancer experience as well as its purpose in their lives (Costain et al., 1993; Fitchett et al., 1996; Moadel et al., 1999). An individual's search for this meaning is argued to be an integral aspect of the adjustment to a threatening event such as cancer (Chochinov, 2003; Frankl, 1984; Taylor, 1983). Frankl (1984), the creator of logotherapy, centered his psychotherapy work around the search for meaning: "Search for meaning is the primary motivation in life" (p. 121). In the case of patients with cancer, this search for meaning allows individuals to find personal significance within the context of their cancer diagnosis experience. This meaning provides a purpose for the experience as well as a context within which to place it (O'Conner, Wicker, & Germino, 1990; Vickberg et al., 2001).

Chronic diseases like cancer can lead to changes in functioning within the patient. These changes are often unfavorable, including helplessness, negative emotionality, and meaninglessness. Then again, changes may be positive, such as optimism and hopefulness

(Gatuszka, 2006; Jim et al., 2006; Thompson & Pitts, 1993). Moadel et al. (1999) explored factors related to meaning of life for patients recently diagnosed with cancer. Their results indicated that finding meaning after being diagnosed with cancer was coupled with higher levels of optimism and lower levels of depression and irrational beliefs. Further, those individuals who focused on positive meaning also reported finding more pleasure in everyday activities. Positive reinterpretation and acceptance can lead to a greater sense of meaning through the reevaluation of the cancer diagnosis as less negative (Jim et al., 2006). Tedeschi and Calhoun (1995) suggested that some positive reflection concerning the diagnosis is necessary in order for growth to occur. Furthermore, those who see their traumatic events in a more positive manner may find personal growth and meaning (Affleck & Tennen, 1996). Finding a positive meaning to frame their cancer experience is inversely associated with negative emotions like depression and hopelessness (Gatuszka, 2006; Thompson, 1985). Overall, patients who have found a sense of meaning after or during a traumatic experience such as cancer tend to develop more effective coping skills and therefore produce better outcomes, physically as well as emotionally (Gatuszka, 2006; Thompson & Pitts, 1993; Zimpfer, 1992).

At the time of diagnosis, cancer patients are preoccupied with concerns about the cancer illness, their prognoses, the meaning of life, and the possibility of death (Jim et al., 2006; Weisman & Worden, 1976). Existential matters such as survival, meaning, and quality of life are contemplated and analyzed. These existential issues gain more importance during this time because without some meaning or purpose in life, the desire and hope for recovery diminishes (Zimpfer, 1992). This perspective parallels Frankl's "will to meaning," which is the basic striving of a man or woman to find and fulfill meaning and purpose in life (Frankl, 1984). Weisman and Worden (1976) studied the concerns that patients encounter within the first three

months of a cancer diagnosis. The majority of patients in their study reported more existential concerns than any other type of concern, including treatment and symptom onset. They also reported that within this time frame, patients reported changes in their perceptions of life, end of life, and cancer disease. Diminished ability to cope with the cancer has been shown to stem from lack of social support, regrets about past life events, family and marital problems, and helpless and hopeless attitudes (Mattioli, Repinski, & Chappy, 2008). Lindholm, Holmberg, and Makela (2005) found that meaning in life and the ability to communicate with others gave patients strength to go on living and to endure extended periods of hopelessness and helplessness.

Those individuals who report higher levels of spirituality have a sense of meaning that facilitates better understanding and coping with unique life experiences and life in general (Fowler, 1981; Weaver & Flannelly, 2004). In a study assessing patients with breast cancer, Feher and Maly (1999) found that the majority of women reported that their faith helped them to make meaning of their cancer experience. Furthermore, when patients come to understand for themselves their own meaning of life, they have a framework with which to see themselves in relation to others within a global context (Ellerhorst-Ryan, 1988; Larson & Greenwald-Milano, 1997).

Faith in Relationship to Spirituality

The word *faith* has an assortment of meanings and interpretations. Essentially the term pertains to unquestioning belief (Wilson & Moran, 1998). Faith may be a belief or trust in objects, people, organizations, ideas, or theory. For example, it may pertain to a trust in individuals, health care providers, medication (Levin, 1994), or a Supreme Being or deity (Fowler, 1986; Levin, 1994; Niebuhr, 1989). Traditionally, faith has been defined as including knowledge, trust, love, commitment, and loyalty (Wilson & Moran, 1988). Faith entails

cultivating and maintaining assumptions by which individuals assemble and guide their lives (Fowler, 1986; Weaver & Flannelly, 2004). In the literature, faith also begins in creating relationships in which loyalty, trust, and commitment are fundamental elements (Fowler, 1986; Niebuhr, 1989; Weaver & Flannelly, 2004). These relationships may be with other individuals such as family, friends, and religious leaders or simply with God (Fowler, 1986; Niebuhr, 1989).

Faith is frequently discussed in various contexts but is often associated with a Supreme Being, religious belief, or both (Levin, 1994; Princeton Religious Research Center, 1986; Wilson & Moran, 1998). From a religious perspective, faith is associated with belief, awareness (Wilson & Moran, 1998), insight, knowledge, and trust (Fowler, 1986). Levin (1994) reported that some of the benefits from having faith or belief in a religion are peacefulness, self-confidence, and a sense of meaning. Individuals with faith have been shown to have a sense of hope, optimism, and courage despite the onset of a terminal illness or trauma (Fowler, 1986; Wilson & Moran, 1998). In a study by O'Conner et al. (1990), cancer patients stated that their faith and religion was a source of hope. Authors have noted that many individuals with severe medical illness cope with their distress through religion, and many patients reported that it was their most important method of coping with the stress and negative emotions (Koenig, 1997; Larson & Greenwald-Milano, 1997). Faith can give patients suffering from cancer a unique framework for finding meaning and perspective through something or someone greater than themselves (McIntosh, Silver, & Wortman, 1993; Weaver & Flannelly, 2004), and faith can also establish a sense of control over feelings of hopelessness and helplessness (Koenig, 2002). Cancer patients often find help through faith and prayer (Koenig, 1997; O'Conner et al., 1990) which are sources of support and inner strength (Wilson & Moran, 1998) and enable patients to cope with the cancer and the potential side effects and consequences (Swensen, Fuller, & Clements, 1993).

Often individuals turn to their faith for support, hope, and help with their anxiety and fears (Wilson & Moran, 1998). Faith, religion, and a community support system are critical for many individuals who are suffering.

Hope

Hope is another component of cancer patients' quality of life that does not fit neatly within the four-component multidimensional quality of life construct. A cancer diagnosis often results in many negative emotions such as fear, devastation, and depression. In studies of patients suffering from cancer, spiritual well-being appeared to be positively related to mood, hope, and overall quality of life (Schnoll, Harlow, & Brower, 2000; Soothill et al., 2002).

Cancer patients also experience positive emotions as they battle their illness. One of these emotions is hope, which allows the patient to mobilize necessary resources in coping with the many difficulties of the disease and treatment (Gatuszka, 2006). Gatuszka (2006) explained that hope, like love, happiness, joy, and goodness, is considered a positive affect even though it remains not quite defined. Several authors have attempted to conceptualize the term. For example, hope has been defined as the "expectation of achieving a future good that seems realistically possible and is personally significant" (O'Conner et al., 1990, p. 167). Hope can also be categorized into generalized hope, or a general faith in the future, and particularized hope, which is goal directed (Clayton, Butow, Arnold, & Tattersall, 2005). Another often utilized approach is to recognize that hope has a specific and individualized meaning for each person and to focus on this meaning during specific situations and times rather than on certain external definitions (Elliott & Oliver, 2002). Patients understand that hope is important in their lives and that it helps them surpass barriers and conflict and continue struggling through the most adverse conditions, such as a terminal illness. Gottschalk (1974) viewed hope as an optimistic

outlook on life and an anticipation of good things to come. Hope has been found to help patients alleviate symptoms associated with illness, cope with suffering, and adapt to and provide meaning in their cancer experience, not to mention maintain high levels of well-being and give direction and meaning (Saleh & Brockopp, 2001). Hope is important in coping throughout the various phases of the illness as well as managing the cancer experience in more effective ways (Benzein, Norberg, & Saveman, 2001; Cutcliffe & Herth, 2002). Patients' overall hopefulness appears to be maintained or even increased in the latter stages of cancer and even when treatment options begin to dwindle. These results should remind health care providers to explore the experience of hope with all patients to make sure that the subjective and interpersonal needs and goals of the patients are being met (Sanatani et al., 2008).

Emotional states appear to make a difference in maintaining positive mood and disposition associated with slower declines in health while negative emotions and expectations are associated with more physical side effects, stress, low satisfaction, psychopathology, poor health outcomes, and negative subjective well-being (Steptoe & Wardle, 2005; Watson & Pennebaker, 1989). Coping with an illness and hope have been found to be positively related, and hope can be seen as either a strategy or the result of coping (Herth, 1990). Holt (2001) found that hope was related with certain identifying factors: social support, cognitive strategies, spiritual readiness, self-worth, meaning, humor, sense of normalcy, relief of symptoms, and living in the present. Other researchers (Baldacchino & Draper, 2001; Felder, 2004) have confirmed these findings. Other sources of hope have also been identified and include staying positive, having affirming relationships, feeling close to God, being optimistic about survival, fostering ongoing accomplishment, and living in the present (Mattioli et al., 2008; Saleh & Brockopp, 2001). Spiritual practices and close proximity to family members have also been

identified as major sources of hope (Saleh & Brockopp, 2001). Buckley and Herth (2004) studied the impact of hope in the terminally ill and their strategies to help foster hope and maintain hope. They found a variety of categories in which their subjects fostered hope, including love for family and friends, setting goals, spirituality, maintaining some independence, positive relationships with caregivers, personal determination, and uplifting memories. Other researchers have found that having meaning in life as well as the ability to communicate with others gave patients strength to go on living and to endure extended periods of hopelessness and helplessness (Lindholm et al., 2005).

Greisinger et al. (1997) assessed patients for existential concerns while in a crisis and found that having a sense of hope, knowing that their lives had been productive and put to good use, and knowing that life has purpose and meaning were all rated highly as important factors in their overall well-being. Many patients are able to get a sense of hope through treatment or anticipation related to finding a cure. When treatments appear to be non-effective, patients look to other sources of hope such as relationships, family, increased faith, finding inner peace, and enjoyment within their lives (Greisinger et al., 1997). Other researchers point out that patients strengthen their hope through communication and interaction with religious leaders and organizations (Weaver & Flannelly, 2004). Spiritual coping, such as meditation, prayer, and attending religious services, may help to shape an individual's sense of hope and meaning in life by providing a framework that may answer many of the questions and issues with which they struggle (Jim et al., 2006).

Spirituality Revisited

As mentioned above, spirituality and religiosity are related but not indistinguishable. Larson, Swyers, and McCullough (1998) have noted that the definitions of religion and

spirituality have developed over the past few years. During the 1960s and 1970s, religion was viewed as a broad concept encompassing spirituality, institutions, and individual elements (Peterman, Fitchett, Brady, Pharm, & Cella, 2002). In recent years, religion has become defined in more concrete and narrow terms, with spirituality distinguished from religiousness or religious practices. Religiosity is also defined as having a religious commitment which refers to the degree in which one adheres to religious values, practices, and beliefs (Worthington et al., 2003). However, an individual may follow a religious doctrine yet lack faith or commitment to a Supreme Being (Hoge, 1996; Worthington, Kurusu, McCullough & Sandage, 1996). A variety of reasons other than spirituality can lead individuals to be involved with a religious organization. Some people attend church to be part of a social network; others go to church to find clients for a business (Hoge, 1996). These examples demonstrate how spirituality does not necessarily represent or indicate religious commitment (Hoge, 1996; Musick, Koenig, Larson, & Matthews, 1998). Thoresen (1998) explained that spirituality and religious commitments share commonalities, but there are unique differences for each. Currently, definitions of spirituality incorporate such dimensions as search for purpose and meaning in life, relationship with transcendent dimensions of life, and the feelings and experiences associated with that search and connection (Koenig, McCullough, & Larson, 2001; Zinnbauer, Pargament, & Scott, 1999).

Research on the relationship between spirituality and health has become more common in the past few decades. In the literature, spirituality significantly contributes to psychosocial adjustment to cancer and its treatment (Weaver & Flannelly, 2004). It has also been noted that there is a relationship between relying on spiritual beliefs and practices and the effectiveness of coping with cancer (Brady et al., 1999). Soothill et al. (2002) suggested that spiritual well-being has been positively related not only to the ability to cope better while dealing with an illness, but

also to the ability to enjoy life even in the midst of acute and chronic symptoms. The significance of spiritual convictions to patients with cancer has been emphasized within the literature (Fernsler, Klemm, & Miller, 1999; Mickley & Soeken, 1993). Meraviglia (2004) found that for patients suffering from cancer, spirituality had a positive effect on physiological and physical well-being. In addition, meaning of life had a strong relationship with spirituality, and more time spent in prayer was related to better psychological well-being. However, although there is abundant literature on the nature of religiosity and quality of life in cancer patients, studies comparing the relationship between spirituality and overall quality of life in cancer patients are lacking (Meraviglia, 2004; Moadel et al., 1999).

Spirituality assessment is important for various reasons. First, there are data that suggest that spiritual and existential well-being is just as important as the psychological, physical, and supportive domains in determining quality of life (Cohen, Mount, Tomas, & Mount, 1996). Spirituality has also been shown to have a stronger relationship to variables such as positive affect and hope than does religious well-being alone (Fehring, Miller, & Shaw, 1997). Second, support of religious views and practices does not rule out the possibility of disagreement or neglect in the spiritual realm that could benefit from intervention, as recommended by some research in which religious variables were associated with poor adjustment in cancer patients (Baider & Sarell, 1983; Weisman & Worden, 1976). As Fitchett and Handzo (1998) made clear, the difference between religiosity and spirituality “points to the importance of including an assessment of [spiritual] needs and resources in a holistic assessment of cancer patients and their families” (p. 790). Third, spiritual needs are often shaped by numerous sociodemographic variables that are not homogenous among patients with a cancer illness. Particularly, the importance of cultural characteristics in spirituality among non-cancer and cancer patient

communities has been clearly acknowledged (Lukoff, Lu, & Turner, 1995; Martsolf, 1997). Similarly, other influences that impact patients such as gender, age, religion, and education, as well as treatment experiences and stage of cancer, may be related to the patients' need for spiritual support. In addition, "meeting the spiritual . . . needs of cancer patients not only involves identification of what needs are important, but which patients are most in need as well" (Moadel et al., 1999, p. 379).

Interest in spirituality has increased in the fields of psychology and oncology due to its potential to help patients understand and cope with negative symptoms and side effects (Weaver & Flannelly, 2004). Although the literature on spirituality is complex, most studies have found spirituality to be beneficial. Spirituality has been found to have a positive relationship with coping, emotional well-being (Koenig, 1997; O'Conner et al., 1990), improved functional and physical status (Jenkins & Pargament, 1995; Matthews & Larson, 1997), as well as an increase in life satisfaction, diminished pain, and overall happiness (Matthews, 1997). In addition, a positive relationship exists between spirituality and wellness and a negative relationship exists between spirituality and health-diminishing behaviors and illnesses (Okeckno & Blacconiere, 1991). It has also been reported that patients tend to increase their focus on spiritual issues and their connection to God as they arrive at the later stages of cancer. In one study (Roberts, Brown, & Elkins, 1997) 108 women at different stages of cancer and treatment reported that they became even more spiritual and religious since being diagnosed with the illness. Despite the increase in physical discomfort and functional deterioration, terminally ill patients often maintain and even increase their connection to God (Weaver & Flannelly, 2004). Matthews (1997) reported that Americans have strong spiritual values and that a high percentage of patients are spiritual. Furthermore, he explained that 75% of the studies about spirituality and health

indicated that spirituality does have a positive correlation with health. Research has also shown that 77% of patients thought that their doctors should take into consideration their spiritual needs and that 79% of patients believed that faith and spirituality can help them recover from illness, trauma, or disease (Larson & Greenwald-Milano, 1997). This further supports the notion that patients' spirituality and faith can affect their perceptions about their illness (Larson & Greenwald-Milano, 1997).

Despite the many studies concerning the benefits of patients' faith and spirituality, spiritual values tend to be excluded from the dominant values in the mental health profession (Bergin, 1980; Greisinger et al., 1997). Larson and Greenwald-Milano (1997) noted that approximately 95% of Americans believe in God and that three out of four Americans base their approach to life on their spiritual beliefs. Despite these prominent beliefs, clinical education, clinical research, and clinical care often neglect spiritual and religious components. Matthews (1997) reported that mental health professionals are remarkably less religious than the general public: 33% versus 72%, respectively. O'Conner et al. (1990) found that every participant in their study reported a religious affiliation, supporting the statistics that show that the majority of not only patients but also Americans in general identify with a religion or have strong spiritual beliefs. Given the empirical support for the relationship of spirituality to health and because health care providers' duties involve promoting patient health, it may be considered necessary and ethical for them to support spiritual growth among their patients (Matthews & Larson, 1997). Neglecting to address patients' spiritual beliefs may inhibit mental health care professionals from being fully effective (Bergin, 1980; Greisinger et al., 1997).

Multiple factors have been identified that contribute to relief of suffering (Peterman et al., 2002). Spirituality has been shown to be one prominent factor (Larson et al., 1998; Matthews &

Larson, 1997). Taking into account the large percentage of people who have strong spiritual beliefs and believe in their value for health and quality of life, it follows that these beliefs should be addressed and considered in mental and physical health care (Larson & Greenwald-Milano, 1997). According to the American Psychological Association (2002), clinicians' respect for patients' beliefs should be maintained. This includes spiritual practices, beliefs, and rituals. Matthews (1997) said that spirituality is valuable and an under-utilized resource in today's health care, notwithstanding its "historical linkage to medicine and [despite] research findings indicating that Americans are highly religious, frequently participate in religiously-based healing activities, and desire to have their spiritual needs addressed as a part of medical care" (p. 9). In sum, there is strong support for promoting spirituality as an essential component of health care. It has even been suggested that the bio-psychosocial model of health care be extended to a bio-psychosocial-spiritual model (Post, 1997).

Age, Gender, and Stage of Cancer

Before a complete picture of hope and spirituality and their relationship with quality of life can be seen, several other variables need to be considered. Age, gender, and stage of cancer may also be factors associated with cancer patients' overall quality of life. A brief review of these variables is presented below.

Age. As individuals age, they tend to participate more in spiritual and religious activities (Hoge, 1996). Individuals 18 to 29 years of age attend church with less regularity than older adults. At around 30 years of age, church attendance increases consistently into the advanced years of life, though it tends to decrease in the later stages of life due to declining physical health and mobility (Hoge, 1996). Furthermore, older individuals pray, meditate, self-evaluate, and ponder about the meaning of life more often than younger individuals (Hoge, 1996).

The relationship between the age of a cancer patient and his or her quality of life has been examined thoroughly (Ganz et al., 1993; Hoge, 1996; Litwins, Rodrigue, & Weiner, 1994; Payne, 1992), but the nature of this relationship is less clear than the nature of the relationship between spirituality and hope and the patients' quality of life. Studies of age and quality of life have had mixed results. In some studies, there is no significant relationship between quality of life and age (Esbensen et al., 2004; Ganz et al., 1993; Litwins, et al., 1994; Whynes, Neilson, Robinson, & Hardcastle, 1994). Other studies have shown a positive relationship between age and certain quality of life domains (Payne, 1992; Roberts et al., 1992). For example, older age was found to have a negative association with psychological distress (Roberts et al., 1992) and with physical distress (Payne, 1992). Payne (1992) found that among patients receiving palliative care, patients 60 years old and older reported less physical and psychological distress, while patients 50 years old and younger reported more psychological distress. Similarly, prostate cancer patients over 65 scored higher and breast cancer patients under 65 scored lower than the norms on a physical functioning assessment (Payne, 1992). Some researchers have found that age is positively correlated to other emotional well-being indicators such as a sense of cohesiveness (Collins, Hanson, Mulhern, & Padburg, 1992) and life satisfaction (Zautra & Goodhart, 1979). Conversely, other researchers reported that increased age is associated with poorer quality of life perception (Litwins et al., 1994). The mixed results may be influenced by the use of differing approaches and assessments in analyzing quality of life. Furthermore, in several of these studies, only one or two dimensions of patient quality of life were examined.

Much research has been done concerning the relationship between hope and age, although the results also appear to be mixed. McGill and Penelope (1993) reported that neither the patients' gender nor age had any impact on hopelessness. In the same vein, Servellen, Sarna,

Padilla, and Brecht (1996) found that age did not predict level of hope. On the other hand, Ringdal (1995) reported that age was significantly related to hope and that the older the patient, the less hope he or she reported having. On the contrary, Maguire (1997) suggested that patients recently diagnosed may have greater depression and hopelessness due to that fact that they may have undergone surgery that removed an important part of their bodies, such as in mastectomy or lumpectomy. These surgeries may promote depression and hopelessness because of the change in self-image and confidence (Maguire, 1997). In addition, because older individuals have faced more life stresses and endured more life problems, they may display less acute reactions to the crisis of diagnosis, thus feeling less hopelessness and anger than younger patients (Gil & Gilbar, 2001). Therefore the question arises whether or not there really is a significant relationship between level of hope and age of the individual.

Gender. How men and women differ in their reactions to and interpretations of cancer experiences has been a focus of research. Just as results concerning the relationship between age and quality of life have been inconsistent, results regarding the relationship between gender and quality of life have also been mixed (Stanton et al., 2002; Zautra & Goodhart, 1979). In a study of the quality of life in lung, prostate, and colon cancer patients, researchers found no significant gender differences in lung cancer patients, but did find that men with colon cancer tended to have higher levels of quality of life than women with colon cancer (Schag et al., 1994). Wellish, Centeno, Guzman, Belin, and Schiller (1996) examined quality of life in patients with acute myelogenous leukemia and found no differences between men and women. Taking into consideration that differences were found between women and men diagnosed with colon cancer, but no differences were found for patients diagnosed with acute myelogenous leukemia or lung cancer, the question arises of how different types of cancer affect quality of life in different

ways. This question and others like it are beyond the scope of this review. Cunningham, Lockwood, and Edmonds (1993) also found no significant correlation between gender and patient quality of life. A possible explanation for the gender differences that have been found is that women may tend to report experiencing negative feelings more than men or perhaps are willing to report them more than men (Zautra & Goodhart, 1979).

Stage of cancer. Stage of cancer refers to the extent and degree to which a patient's cancer illness has progressed. Being able to define and evaluate a patient's stage of cancer is imperative because knowledge and awareness of the cancer stage fulfills four main purposes as explained by Dollinger et al. (1991). First, stage of cancer indicates the general extent of the malignant tumor: its size and mass, its growth and development, and its general spread. When a tumor increases in size and spreads to other regions within the body, the cancer advances in stage. Second, stage of cancer provides an estimated prognosis of the cancer. At later stages of cancer, the cure rates decrease and the prognosis becomes less optimistic. Third, the cancer stage provides a standardized system that physicians worldwide can use to compare and contrast precise treatments for specific stages of the cancer. The fourth reason that understanding the stage of cancer is important is the stage of cancer is one of the primary factors for deciding which treatment to use.

Stages of cancer range from stage 0 to stage 4, with the number increasing with larger tumor size and amount of growth and spread. Patients in the later stages of cancer (i.e., stage 3 or 4) have a propensity to experience more functional and physical problems and limitations and therefore may report a lessening in their quality of life. However, the literature on the relationship between quality of life and stage of cancer has had mixed results. Some researchers have found stage of cancer and quality of life to be related. More specifically, as patients arrive

at the later stages of cancer, their perceptions and views toward their cancer illness change and they report having a lower quality of life (Cella et al, 1993; Whynes et al., 1994). Other researchers, however, found that no relationship emerged between stages of cancer and quality of life (Edgar, Rosberger, & Nowlis, 1992; Litwins et al., 1994).

Stage of cancer has also been assessed in relation to hope and spirituality. One main factor that correlates with hopelessness among patients suffering from cancer is the clinical course and stage of cancer (Gil & Gilbar, 2001). Stoner and Keampfer (1985) found that terminal patients tend to be more hopeless than patients who are actively in treatment. On the other hand, Sanatani et al. (2008) found that hope may be maintained in patients regardless of cancer stage or terminal prognosis. Therefore, data regarding the relationship between hope and stage of cancer appears to be ambiguous, which supports the need for further research to be done in this area.

The clinical course of cancer is a topic closely related to the stage of cancer but has some unique distinctions. The clinical course of cancer refers to the experiences that an individual encounters while living with the cancer illness. Holland (1989a) described four general courses that the disease can take. The first course is an increased length in survival and cure of the disease. The second course is a period with no clinical evidence of the disease and remission followed by recurrence of the tumor. The third course is the failure to obtain any disease-free periods as a result of poor treatment response. The fourth course is no primary treatment options or possibilities.

A variety of reactions are coupled with these four courses, but regardless of the course, patients typically experience a first phase: revealing of the symptoms, identification and diagnosis of the illness, and planning the course of treatment (Holland, 1989a). Once the

symptoms are detected and the diagnosis is made clear, patients often report anxiety, depression, and uncertainty as well as conflicting thoughts of hope and despair (Holland, 1989a). Other reactions include fear, terror, denial, anger, psychic numbing, contemplating possible mortality, and mixed emotions about God and oneself (Loscalzo & Brintzenhofeszoc, 1998). Further responses during the treatment course include not only fear, anxiety, and depression, but also confusion, agitation, need for control, denial, vulnerability, pain, relief, and fear of intimacy (Loscalzo & Brintzenhofeszoc, 1998). The final phases of recurrence and terminal illness create additional issues and concerns such as guilt, feelings of alienation, loss of control, and perhaps loss of hopefulness (Loscalzo & Brintzenhofeszoc, 1998). The focus of the present study was on the four treatment phases, as well as the period of cancer remission, and their relationship to quality of life. Both potentially curative and palliative treatments were included.

Several authors (Gotay, 1984; Loscalzo & Brintzenhofeszoc, 1998) have noted that during the initial two weeks after the patients learn of the diagnosis they are typically in a crisis response mood, but in the following weeks, the acute distress begins to diminish and the patient begins to incorporate the cancer treatment into his or her daily routine and life. Because acute distress is not a stable representation of quality of life, patients were not approached during this phase of their illness for the current study.

Summary

Quality of life is generally defined in the literature as including four components of a cancer patient's life: social well-being, physical well-being, functional well-being, and emotional well-being (Aaronson et al., 1994; Cella, 1994; Montgomery et al., 2002; Tope et al., 1993). Although these four components are interrelated, each has its own domain within patients' lives (Cella, 1994). The multidimensional feature of global quality of life is essential because it offers

a broad sense of patients' subjective experiences. In addition, more and more researchers are suggesting that hope and spirituality are important and positive elements of a cancer patient's experience (Chochinov, 2003; Fitchett et al., 1996; Koenig, 1997; Miller, 1997).

Moadel et al. (1999) asked 248 cancer patients what their most important needs were. Almost half of the participants reported that they needed assistance in managing their fears, finding hope, obtaining peace of mind, improving meaning in life, and finding spiritual resources. In a national survey, Meier et al. (1998) noted that the loss of meaning in life was one of the reasons most commonly cited by clinicians as to why patients requested assisted suicide. Without a doubt, issues such as hope, meaning of life, purpose, and spirituality must be considered within the realms of quality of life and medical care.

Zimpfer (1992) understood the importance of spirituality to patients suffering from cancer, as he developed a wellness model for helping these patients to cope with their illness. His model incorporates spirituality in addition to other important components of quality of life concerning prayer and meditation to be essential spiritual practices that may be effective in whatever manner the patients decide to conceptualize the practices. Zimpfer also asserted that spirituality, whether within a particular religion or not, offers another method through which patients may increase their willingness to participate in and be empowered during their cancer experience. He also affirmed that patients who are unable to resolve their existential issues are often unable to find relief and hope and frequently have more difficulties recovering from their illness.

Previous research indicates that nearly half of all cancer patients report having unmet spiritual and existential needs (Jenkins & Pargament, 1995). Patients report needing help to overcome fears, find hope, achieve peace of mind, and discover the meaning of life, and locate

more spiritual resources. The importance of spiritual and existential concerns is clearly represented in the cancer population.

Because spirituality and hope are important aspects of patients' global quality of life, they should be considered more often in treating those with cancer and continue to be investigated and researched for possible significance. Clinicians and medical providers also need to be mindful and aware of the research showing how hope and spiritual beliefs and practices can be useful for many patients suffering from severe illness and disease. With this in mind, the medical community would be wise to integrate these scientific findings into practice and treatment in order to promote better patient care.

In addition to hope and spirituality as significant aspects of patients' quality of life, other variables of age, gender, and stage of cancer should be examined to understand their importance. The findings regarding these variables and their relationship with patient quality of life are varied. If these variables are associated with quality of life, they may possibly confound the relationship between hope, spirituality, and quality of life. For this reason, age, gender, and stage of cancer were assessed for their relationship with quality of life in this study.

Research regarding hope, spirituality, and quality of life tends to be focused on later stages of the illness or further into the clinical course of the cancer (Loscalzo & Brintzenhofeszoc, 1998; Swensen et al., 1993). In the present study, I addressed hope, spirituality, and quality of life not only in the later stages of the cancer, but in the initial stages and in the remission phase as well. The focus of the present study examined patients coping with multiple aspects of the disease, not only how it is related to the four multidimensional components of quality of life, but also if and how hope and spirituality relate to patient quality of life.

CHAPTER 3

METHODOLOGY

Participants

One hundred oncology patients ($N = 100$) participated in this study. Selection criteria for the participants included the following: the participants needed to be at least 18 years old, must be receiving or have received treatment recently for the cancer illness, must have had the initial diagnosis at least one month prior to participation, and must be able to give and understand consent for participation.

Participants were patients currently receiving cancer treatment or still maintaining follow-up check-ups at two oncology treatment facilities. Other participants were actively involved in various cancer support groups within the community. Of the 100 oncology patients who participated in this study, 52 were women and 48 were men. Age of participants ranged from 33 to 92 years of age, with a mean age of 67.67 and standard deviation of 11.38.

Ninety-three percent of the participants were Caucasian American, 5% were African American, and 2% were other ethnicities. Education level of the participants ranged from ninth grade or less to graduate degree. The mode of level of education (39%) was a high school diploma or G.E.D. The next most frequently reported education level (27%) was some college. The data collection began in March 2010 and concluded in June 2010.

Sampling

Patients who met the selection criteria for the study were contacted in person while at the oncology treatment facilities and asked to participate in the study. The participants filled out the questionnaires while in the waiting room before receiving treatment or later on during a round of treatment, depending on their preference. One hundred and fifteen cancer patients who met the selection criteria were invited to participate in the study. One hundred patients accepted the invitation and filled out the packet of questionnaires. The participation rate in the study was 88%.

In collaboration with physicians, oncologists, and administrators, patients were selected in order to find those that met the necessary criteria for participation in the study. At the two oncology treatment centers, patients arriving for an appointment were identified through the assistance of the director of nursing and secretarial staff as being a patient that meets the participation criteria (as mentioned in the previous section). Once identified, I approached the patient, explained the study, and invited the patient to participate. If the patients gave consent to participate, they were then given the opportunity to fill out the questionnaires while in the waiting room before receiving treatment or later during a round of treatment, depending on their preference.

An a priori power statistical analysis was performed utilizing an alpha level of .05, desired power of .80, and medium effect size of .15. The analysis indicated a minimum number of 90 participants were needed in order to obtain a statistical power of .80. One hundred participants agreed to participate in this study, which exceeded the desired number in order to obtain this power.

Instruments

Functional Assessment of Cancer Therapy (FACT)

The Functional Assessment of Cancer Therapy (FACT, version 4; Cella, 1994) was used to measure the participants' global quality of life. The FACT is a 27-item questionnaire that uses a five-point Likert scale for responses ranging from *not at all* to *very much*. The FACT contains four subscales: physical well-being (PWB), functional well-being (FWB), social/family well-being (SWB), and emotional well-being (EWB). The FWB subscale assesses the ability to perform normal activities related to personal and occupational needs. The SWB subscale assesses perceived social support, family functioning, and intimacy. The EWB subscale assesses both positive and negative affect and mood. The sum of these four subscales generates the FACT total score, which represents the global quality of life of the participants. See Appendix A for a copy of the full assessment.

The FACT was composed through a five-phase validation process (Cella et al., 1993). In the first phase, items were generated through a semi-structured interview process with 45 patients and 15 oncologists. The second validation phase consisted of a review and reduction in the number of items. Items that were alike were consolidated into fewer items. The number of core questions totaled 38, but was then reduced further in later versions and now consists of 27 questions in FACT version 4. The third phase emphasized scale construction and pilot testing of the items. The fourth phase involved continued evaluation and final construction of the scales. The responses of 545 patients were analyzed through a factor analysis and five significant factors were elicited (Cella et al., 1993).

The FACT full scale demonstrates a high level of internal consistency (Cronbach's alpha = .89). The FACT subscales also showed moderate to high internal consistency. Cronbach's

alphas for the subscales are as follows: PWB = .82; SWB = .69; EWB = .74; and FWB = .80. The FACT test-retest correlation coefficients within a three to seven day interval are: PWB = .88; FWB = .84; SWB = .82; EWB = .82; total score = .92. These results support strong reliability for the measure (Cella et al., 1993). A multivariate analysis of variance of patients' stage of illness and clinical status displayed a significant overall effect ($p = .002$), which indicates that the FACT is sensitive enough to distinguish between stage of illness and change in clinical status over time (Cella et al., 1993).

Convergent validity was supported by the FACT's significant positive correlation ($r = .79$) with a similar quality of life measure, the Functional Living Index – Cancer (FLIC), and its significant negative correlation with mood distress as measured by the Profile of Mood States (POMS; $r = -.65$) and the Taylor Manifest Anxiety Scale (TMAS; $r = -.58$). The FACT was poorly correlated with social desirability as measured by the Marlowe-Crowne Social Desirability Scale (M-CSDS; $r = .22$), a dissimilar measure to which a low correlation is expected. This shows its divergent validity (Cella et al., 1993).

Functional Assessment of Chronic Illness Therapy—Spiritual Well-being (FACIT-Sp)

Functional Assessment of Chronic Illness Therapy—Spiritual Well-being (FACIT-Sp; Peterman et al., 2002) was utilized to assess participants' spirituality. The FACIT-Sp is a 12-item questionnaire that utilizes a five-point Likert scale ranging from *not at all* to *very much*. Higher scores on the FACIT-Sp indicate more spirituality. The FACIT-Sp was developed with the input of cancer patients, religious and spiritual experts, and psychotherapists who were asked to describe their thoughts concerning different aspects of faith, meaning, and spirituality that contribute to quality of life (Peterman et al., 2002). Responses emphasized harmony in life, a purposeful life, a sense of meaning, peace of mind, and a sense of comfort and strength from

one's faith (Fitchett et al., 1996). Items in the scale were derived from interviews taken from multiple participants during the original FACT development, followed by additional interviews with 200 patients that were validated and translated, as well as interviews with numerous hospital chaplains (Peterman et al., 2002). The FACIT-Sp is comprised of two subscales: one measuring a sense of peace and meaning and the other measuring the role of faith in illness. A total score of spiritual well-being is then produced. See Appendix B for the measure.

The reliability of FACIT-Sp and subscales was assessed with internal consistency coefficients, which reflect the extent to which all items on a particular scale measure a single unified concept. The FACIT-Sp demonstrates a high level of internal consistency (Cronbach's $\alpha = .87$). The alpha coefficients for the FACIT-Sp and the two subscales were relatively high (Cronbach's $\alpha = .81$ to $.88$; Peterman et al., 2002). Concerning the validity of the scale, there were significant correlations between the total scale score and quality of life, as measured by the total FACT score and its subscales. In addition, both subscales (Peace/Meaning and Faith) were positively related to the FACT and its subscales (Fitchett et al., 1996). FACIT-Sp was also significantly correlated with the POMS, supporting the reliability and validity of the FACIT-Sp instrument (Peterman et al., 2002).

Herth Hope Index (HHI)

The Herth Hope Scale (HHS) is a measure designed to evaluate hope in adults. The HHS was administered (Herth, 1991) to 180 cancer patients, 185 well adults, 40 well elderly, and 75 elderly widow(er)s. "The alpha reliability coefficients for the total scale ranged from $.75$ to $.94$ with a three-week test-retest reliability of $.89$ to $.91$. A negative correlation ($r = -.69$) was found between the Herth Hope Scale and the Beck Hopelessness Scale" (Herth, 1991, p. 39). The HHS is a multidimensional instrument that was established via the factorial isolation of three sub-

scales—interconnectedness, temporality and future, and positive readiness and expectancy—which accounted for 58% of the total variance in the instrument. Additionally, hope-oriented strategies could be recognized and examined for their ability to alter hope states (Herth, 1991).

The Herth Hope Index (HHI) is a 12-item assessment adapted from the HHS and was tested with a convenience sample of 172 ill adults (Herth, 1993). The HHI was created to assess hope in adults in clinical settings on a Likert scale as in the following question: *I have a positive outlook toward life?* strongly disagree (1) to strongly agree (4) (Herth, 1993). The alpha coefficient of this instrument was 0.97 with a test-retest reliability two weeks later of 0.91. Criterion-related validity was ascertained by correlating the HHI with the Nowotny Hope Scale ($r = .81$), the Existential Well-Being Scale ($r = .84$), and the original HHS ($r = .92$), all of which were found to be significantly positively correlated with the HHI. Divergent validity with the Beck's Hopelessness Scale was also established ($r = -.73$). As with the HHS, the HHI utilized the factorial isolation of three factors—temporality and future, positive readiness and expectancy, and interconnectedness—to establish the construct validity. “These three factors accounted for 41% of the total variance in the measure” (Herth, 1992, p. 1251). See Appendix C for a copy of the full assessment.

Demographic Form

An additional form was used to gather demographic information regarding gender, age, and stage of cancer. In addition, I gathered information concerning ethnicity and education in order to better describe the sample. See Appendix D for a copy of the demographic form.

Psychometric Analysis of the Present Study

The reliability estimates of the measures utilized in this study were high with this population. The Cronbach alphas for the total score of the measures (FACT-G, FACIT-Sp, and

HHI) were comparable with the alphas obtained in the development of the measures. The FACT full scale for this analysis demonstrated a high level of internal consistency (Cronbach alpha = .88), which was relatively the same as the original development of the measure (Cronbach alpha = .89). The FACIT-Sp demonstrated a high level of internal consistency as well (Cronbach alpha = .89), which was slightly higher than the original measure (Cronbach alpha = .87). The Cronbach alpha for the HHI during this analysis (Cronbach's alpha = .88) was also comparable to the original data set forth during the development of the measure (Cronbach's alpha = .91) (Herth, 1991).

Procedures

The present study followed the American Psychological Association's (APA) ethical standards and was also approved by the University Institutional Review Board (IRB). I worked with oncologists, nursing staff, and appropriate administration of the Oncology Medical Center in order to obtain permission and access to potential participants. I met in person with each research participant explaining the purpose of the research, confidentiality and informed consent, as well as procedures that would be performed in order to keep data confidential and protected, as per the APA ethical guidelines. The participants in the study were provided a packet containing the FACT, FACIT-Sp, HHI, the demographic form, and the informed consent form. The participants in this study read and signed the informed consent form and completed the three questionnaires and the demographic form. Debriefing and/or referral to a mental health professional was also available as needed on an individual basis to all participants.

Specific information regarding participant data was and will continue to be kept secure and confidential. After collecting the packet with the completed questionnaires, I separated the

demographic data and the signed informed consent form from the other surveys, at which point the data from the three questionnaires were analyzed according to the chosen statistical method.

Informed Consent Form

The informed consent form was given to each participant in order to provide a brief explanation of the study. The form explained the potential minimal risks involved in participation in the study (e.g., anxiety or increased stress) and provided information regarding whom to contact if the participants experienced any difficulties as a result of their participation. An explanation was also provided regarding the possible benefits of participating in the study (e.g., insight, existential awareness, and understanding of the possible relationship between the variables). Finally, the participants were informed that their participation in the study was completely voluntary. See Appendix E for a copy of the informed consent form.

Research Questions

In the current study I investigated the relationship that certain independent variables (hope, spirituality, stage of cancer, age, and gender) had on one dependent variable (quality of life). It was hypothesized that cancer patients' level of hope and spirituality are positively related to and predictive of patients' overall quality of life. It was also postulated that age, gender, and stage of cancer had an impact on quality of life. Based on previous research in the area, it was predicted that younger age, earlier stages of cancer and/or remission, and being a woman were positively related to patient's global quality of life. Descriptively, I was interested in the following questions.

1. What is the perceived level of quality of life for cancer patients?
2. What is the perceived level of spirituality of these patients?

3. What are the perceived levels of the quality of life subscales (Physical Well-Being, Functional Well-Being, Social Well-Being, and Emotional Well-Being) and how do they compare with one another?

Beyond describing the variables, this study also investigated relationships among variables. The following questions were asked in order to determine if and what relationships exist.

4. Is there a significant correlation between hope and spirituality? It was expected that there will be a positive correlation between these two variables.
5. Is there a correlation between hope and stage of cancer? This question was exploratory and no direction was hypothesized for this correlation.
6. Is there a correlation between spirituality and stage of cancer? This question was exploratory and no direction was hypothesized for this correlation.

In addition, I hoped to understand the relationship and/or predictability between the independent variables and the dependent variable.

7. Are the variables of hope, spirituality, gender, age, and stage of cancer predictive of overall quality of life?

Study Design

In order to answer the questions about the perceived level of quality of life for cancer patients, perceived level of spirituality of these patients, and how the four quality of life subscales contrast compared to each other, a descriptive analysis of the data was performed. This descriptive analysis included calculation of means and standard deviations of the four quality of life subscales, the overall quality of life score, and the overall spirituality score. In order to determine whether there was a correlation between hope and spirituality, hope and stage

of cancer, and spirituality and stage of cancer, three separate Pearson Product Moment Correlation Coefficient analyses were performed. Finally, in order to answer the predictive research question, a simultaneous multiple regression analysis was used to ascertain if the five independent variables of hope, spirituality, gender, age, and stage of cancer were significant predictors of the dependent variable, global quality of life.

CHAPTER 4

RESULTS

Demographic Information

One hundred patients accepted the invitation and filled out the packet of questionnaires. Table 2 displays the demographic information of the 100 participants in the study. Included in the table are the percentages of men and women, percentages of participants within various education levels, and the ethnic background of the participants.

Table 2

Gender, Education, and Ethnic Demographic Information (N = 100)

Demographic Characteristics	Percent
Gender	
Female	52
Male	48
Education Level	
9 th Grade or Less	10
10 th to 11 th	12
High School Graduate	39
Some College	27
Bachelors Degree	8
Graduate Degree	3
Missing Data	1
Ethnicity	
Caucasian American	93
African American	5
Other	2

Stage of cancer included all four stages and remission. The number of participants in the four cancer stages was relatively even. Four participants failed to report stage of cancer. Of the various cancer diagnoses, colon cancer (20.0%), lung cancer (17.0%), and breast cancer (13.0%), were represented more than other diagnoses. The medical diagnosis and stage of cancer of the participants is presented in Table 3.

Table 3

Percentage of Participants in each Identified Cancer Diagnosis and Stage of Cancer (N = 100)

Demographic Characteristics	Percent
Cancer Diagnosis	
Colon	20
Lung	17
Breast	13
Throat	9
Prostate	7
Bone	7
Lymphoma	5
Multiple Myeloma	5
Leukemia	3
Liver	2
Other	10
Missing Data	2
Stage of Cancer	
Stage 1	20
Stage 2	7
Stage 3	26
Stage 4	35
Remission	8
Missing Data	4

Analysis

The oncology patients' perceived level of spirituality and hope were assessed. Additionally, the overall quality of life as well as the four subscales of the quality of life measure (PWB, FWB SWB, and EWB) were examined to assess the patients' perceptions of their current

quality of life status. In order to examine the perceived levels of the quality of life subscales (PWB, FWB SWB, and EWB) and how they compare with one another, the means and standard deviations for each of these are provided in Table 4.

Table 4

Means and Standard Deviations for Oncology Patients' Scores on Quality of Life, Hope, and Spirituality (N = 100)

Variables	Mean	SD
Overall Quality of Life	2.91	0.58
Four Quality of Life Sub-Scales		
Physical Well-Being	2.67	0.81
Social Well-Being	3.35	0.54
Emotional Well-Being	3.02	0.75
Functional Well-Being	2.60	0.91
Hope	3.48	0.47
Spirituality	3.27	0.70

Examination of patient spirituality resulted in a mean score of 3.27 on a Likert Scale of 0 to 4 with higher scores indicating greater spirituality; therefore, mean scores of 3.00 or higher would indicate greater endorsement of spirituality and mean scores of 2.00 or less would indicate fewer endorsements of spirituality. Examination of patient perceived level of hope resulted in a mean score of 3.48 on a Likert Scale of 1 to 4. Patient overall quality of life yielded a mean score of 2.91 on a Likert Scale of 0 to 4. Of the four quality of life subscales, social well-being resulted in the greatest endorsed scale with a mean score of 3.35 followed by emotional well-being (3.02), physical well-being (2.67), and functional well-being (2.60). These results suggest that emotional aspects of patient's lives as well as social activities and factors contribute strongly to the patients' overall quality of life, more so than physical and functional activities and abilities.

Table 5

Means and Standard Deviations on Individual Items within the Hope and Spirituality Scales (N = 100)

Variables	Mean	SD
Hope		
I can recall happy/joyful times	3.71	0.50
I am able to give and receive caring/love	3.68	0.55
I have a faith that gives me comfort	3.63	0.61
I feel my life has value and worth	3.61	0.62
I believe that each day has potential	3.59	0.62
I have deep inner strength	3.53	0.66
I have a positive outlook toward life	3.50	0.67
I feel all alone	3.49	0.87
I can see possibilities in the midst of difficulties	3.36	0.70
I have a sense of direction	3.32	0.74
I have short and/or long range goals	3.18	0.73
I feel scared about my future	3.13	1.00
Spirituality		
I know that whatever happens, things will be ok	3.69	0.72
I have a reason for living	3.62	0.69
My life has been productive	3.56	0.72
I find comfort in my faith or spiritual beliefs	3.47	0.97
I find strength in my faith or spiritual beliefs	3.47	0.99
My life lacks meaning and purpose	3.23	1.19
I am able to reach down deep for comfort	3.09	1.01
I feel a sense of purpose in my life	3.09	1.07
I feel a sense of harmony within myself	3.01	1.07
I have trouble feeling peace of mind	3.01	1.16
My illness has strengthened my spiritual beliefs	2.99	1.35
I feel peaceful	2.98	1.09

Further examination of the items comprising the two main independent variables, hope and spirituality, revealed particularly high scores for certain statements and themes while others remained relatively low or average. Table 5 lists these items. The table is composed of the means and standard deviations of these two variables in order from highest to lowest mean

scores. The statements that appear to have the highest scores on the hope scale are those items that are associated with self-worth, happy/joyful memories, faith, and an ability to accept love and care from others. The statements that appear to have the highest scores on the spirituality scale are those concerning faith, confidence, purpose, productivity, and finding strength and comfort in spiritual beliefs.

Correlations

Correlations among three variables were examined to determine the strength and direction of relationship between variable pairs: hope and spirituality, hope and stage of cancer, and spirituality and stage of cancer. Pearson correlations between the variables were calculated. Examination of the correlation coefficient matrix revealed that hope and spirituality were positively correlated, $r = .81$, $n = 100$, $p < .01$, two-tailed. This indicates that individuals who are highly hopeful are also likely to have greater spirituality and those individuals who are highly spiritual are also more likely to report having higher levels of hope in their lives. The correlation between hope and stage of cancer revealed no significant correlation, $r = -.004$, $n = 100$, $p = .96$, two-tailed. This indicates that hope is not necessarily connected to stage of cancer. Some patients may endorse higher levels of hope in earlier stages of cancer, while others may endorse more hope in later stages. Additionally, some patients' hope may not change regardless of their stage of cancer. Another point to consider is that hope may fluctuate throughout the cancer experience and therefore from stage to stage. Spirituality and stage of cancer also produced no significant correlation, $r = -.02$, $n = 100$, $p = .86$, two-tailed. The same conclusions can be made for spirituality and stage of cancer as were made for hope and stage of cancer. Some patients may endorse spirituality in earlier stages of cancer, while others may endorse more spirituality in

later stages. Additionally, some patients' spirituality may not change regardless of their stage of cancer.

Multiple Regression Analysis

I examined the relationship between the independent variables hope, spirituality, gender, age, and stage of cancer and the dependent variable overall quality of life. A simultaneous multiple regression analysis was used to ascertain if hope, spirituality, age, gender, and stage of cancer significantly predict quality of life in cancer patients.

Five necessary assumptions for multiple regression were evaluated prior to performing the regression analysis. Linearity was assessed by looking at the residual plot and by determining whether the residuals fell within ± 2 standard errors on both axes of the plot. Multicollinearity was assessed via the tolerance and VIF statistics. Although the variables hope and spirituality were correlated with each other, the strength of the correlation was not to the level to create a violation of the assumption. The residuals were normally distributed. This was assessed by examining the normal probability plot and histogram of residuals. The histogram of residuals plot showed most of the data falling within two standard deviations from the mean, resulting in a bell-shaped curve. Homogeneity of variance of the residuals was met as shown by the plot of residuals. The plot illustrated a consistency within the variance of residuals. Finally, the independence of residuals was met by examining a random display of the residuals with no systematic pattern evident.

The results of the multiple regression indicate that the independent variables do significantly predict overall quality of life in cancer patients, $F(5, 90) = 17.03$ $p < .001$ (see Table 6). The multiple correlation coefficient, which measures the strength of the association between the independent variables and the dependent variable, was relatively strong ($R = .69$).

Altogether, 48% ($R^2 = .48$, Adjusted $R^2 = .46$) of the variability in quality of life was predicted by the independent variables and the discrepancy between the sample and the corresponding population is minimal. In other words, hope, spirituality, gender, age, and stage of cancer accounted for 48% of the variability in the patients' overall quality of life.

Table 6

Multiple Regression Analysis for Variables Predicting Quality of Life (N = 100)

Variables	<i>b</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
Hope	.45	.16	.37	2.82	.006
Spirituality	.25	.10	.31	2.34	.021
Gender	.04	.08	.03	.49	.621
Age	.00	.00	.15	1.95	.054
Stage of Cancer	-.08	.03	-.21	-2.81	.006

Of the five independent variables, three were found to be significant. Hope was found to be a significant predictor of quality of life, $t(95) = 2.83$, $p < .05$. As hope increases one unit and all other predictors are held constant, quality of life is predicted to increase .45 units. Spirituality was found to be significantly predictive of quality of life, $t(95) = 2.34$, $p < .05$. As spirituality increases one unit and all other predictors are held constant, quality of life is predicted to increase .25 units. Stage of cancer was also found to be a significant predictor of quality of life, $t(95) = -2.81$, $p < .05$. As stage of cancer increases one stage and all other predictors are held constant, quality of life is predicted to decrease .09 units.

The correlations of the five independent variables resulted in some variables having stronger correlation with the dependent variable than other variables. Three correlations between the independent variables were significant: hope and quality of life ($r = .61$), spirituality and quality of life ($r = .62$), and stage of cancer and quality of life ($r = -.20$). Age and quality of life ($r = .14$) and gender and quality of life ($r = -.05$) were not significantly correlated. Although

stage of cancer and quality of life were significantly correlated in this study, previous research on stage of cancer, age, and gender has resulted in mixed outcomes; with some researchers reporting significant correlations and others reporting no relationship. The correlation matrix of the variables within this study is presented in Table 7.

Table 7

Summary of Intercorrelations of Quality of Life, Hope, Spirituality, Gender and Age (N = 100)

Variables	Quality of Life	Hope	Spirituality	Gender	Age
Quality of Life	—				
Hope	.61*	—			
Spirituality	.62*	.81	—		
Gender	-.04	-.09	-.12	—	
Age	.13	-.04	.07	-.08	—
Stage of Cancer	-.20*	-.00	-.01	-.01	.10

* $p < .05$

CHAPTER 5

DISCUSSION

Analyses

Correlations

The following questions were asked in order to determine what relationships existed among three particular variables. Is there a significant correlation between hope and spirituality? Is there a correlation between hope and stage of cancer? Is there a correlation between spirituality and stage of cancer? Additionally, whereas spirituality and hope were found to be significantly positively correlated with hope, hope and stage of cancer as well as spirituality and stage of cancer were found not to be significantly correlated.

Hope and spirituality. In the present study a positive meaningful relationship between hope and spirituality was found. This supports previous literature which indicates that hope and spirituality are positively related (Buckley & Herth, 2004; Saleh & Brockopp, 2001). Buckley and Herth (2004) reported that hope can be strengthened through spiritual approaches such as the study of spiritual and religious organizations. Spiritual practices have also been identified as major sources of hope (Saleh & Brockopp, 2001). Buckley and Herth studied the impact of hope in the terminally ill and their strategies to help foster and maintain hope. In their research Buckley and Herth found a variety of strategies that fostered hope in their subjects, including love for family and friends, setting goals, spirituality, maintaining some independence, positive

relationships with caregivers, personal determination, and uplifting memories. Other researchers have found that spirituality and the ability to discuss meaning of life issues with others gave patients strength to go on living and to endure extended periods of hopelessness and helplessness (Lindholm et al., 2005).

Greisinger et al. (1997) assessed patients for spiritual concerns while in a crisis and found that having a sense of hope, knowing that their lives had been productive and put to good use, and knowing that life has purpose and meaning were all rated highly as important factors in their overall well-being. Many patients are able to get a sense of hope through treatment or anticipation related to finding a cure. Other researchers pointed out that patients also place importance on communications and interactions with religious leaders to help them maintain optimism and hope (Weaver & Flannelly, 2004). Spiritual coping, such as meditation, prayer, and attending religious services, may help to shape an individual's sense of hope and meaning in life by providing a framework that may answer many of the questions and issues with which they struggle (Jim et al., 2006). It may be that when treatments appear to be non-effective, patients look to other sources of hope such as faith, stronger conviction and devotion, finding inner peace, and spiritual leaders and resources. One of the commonalities that hope and spirituality share is that they are both future oriented, looking toward what might be.

Hope and stage of cancer. Hope was not related to stage of cancer. Previous literature concerning this relationship has resulted in mixed outcomes. Gil and Gilbar (2001) found that one main factor that correlates with hopelessness among patients suffering from cancer is the clinical course and stage of cancer. Stoner and Keampfer (1985) found that terminal patients tended to be more hopeless than patients who are actively in treatment (i.e., earlier stages of cancer). On the other hand, Sanatani et al. (2008) found that hope may be maintained in patients

regardless of cancer stage or terminal prognosis. Therefore, data regarding the relationship between hope and stage of cancer appear to be ambiguous, which supports the needs for further research to be done in this area. It is also important to consider the relative significance of functional and physical well-being and what impact these two factors play in patients' level of hope during later stages of cancer. As cancer metastasizes and the illness spreads, patients often experience more distress and often become less mobile. Additionally, the toll that many treatments have on individuals with cancer can be overwhelming. These differences in the literature concerning the relationship between hope and stage of cancer may be a result of certain patients responding differently to their cancer illness and treatments. Furthermore, it is also possible that certain cancer diagnoses may have impacted the patients' quality of life and hope in different ways, a question that I was not able to explore.

Spirituality and stage of cancer. Spirituality was found not to be related to stage of cancer. It is possible that for many highly spiritual individuals suffering from cancer, regardless of their illness or disease, they are able to maintain their strong spiritual beliefs and practices. Previous literature concerning this relationship has resulted in mixed outcomes (Burkhardt, 1994; Gatuszka, 2006; Meraviglia, 2004). Many research outcomes indicate higher levels of meaning in life and spirituality with later stages of cancer and that cancer patients tend to increase their focus on spiritual issues and their connection to a higher power as their cancer advances (McMillian & Weitzner, 2000; Weaver & Flannelly, 2004). This would suggest a positive correlation between spirituality and stage of cancer. It has also been shown that patients "maintain their relationship with God in spite of severe functional difficulties and serious physical symptoms" (Weaver & Flannelly, 2004, p. 1212). On the other hand, Gatuszka's (2006) research has discovered not only positive relationships between spirituality and stage of

cancer but also negative relationships. A possible explanation for the negative relationship between spirituality and stage of cancer that Gatuszka (2006) found in some of his studies is that increased cancer severity often comes with more physical and functional difficulties, which may result in increased depression, feelings of hopelessness, and struggles with faith.

Another possible explanation for having a negative relationship between spirituality and stage of cancer might be that as patients' cancer progresses into later stages, their spirituality may decrease. In other words, as patients' cancer progresses, they may lose strength in their religious beliefs. Patients with advanced cancer may experience a variety of symptoms. They may want to know what symptoms they might experience, be aware of their prognoses, and talk to their doctors truthfully about their prognoses. Many patients fear being in pain because of the discomfort, the associated restlessness, and the feelings and symptoms that pain can cause. These adverse feelings and symptoms may challenge a patient's hope, faith, and spirituality. A third possible interpretation regarding the relationship between spirituality and stage of cancer is that as patients' cancer progresses, they may be less able to actively participate in their spiritual and religious organizations.

Descriptive Analysis

Descriptively, I was interested in the participants' perceived level of spirituality, the perceived level of quality of life, the perceived levels of the quality of life subscales (PWB, FWB, SWB, and EWB) and how they compare with one another.

Perceived level of spirituality. Examination of patient spirituality resulted in elevated scores overall. The majority of oncology patients reported having strong spiritual beliefs. The phrases that participants endorsed most frequently while taking the FACIT-Sp questionnaire were: I find comfort in my faith or spiritual beliefs; I find strength in my faith and spiritual

beliefs; I know that whatever happens with my illness, things will be okay; and I have a reason for living.

The majority of the participants in this study believed that overall their spiritual beliefs help them cope with the fears and uncertainties of their illness and future. It is possible that spirituality provides additional meaning, a sense of purpose, and hope in their lives, and it appears that the patients in this study were able to maintain these positive feelings throughout the cancer illness. Research on the relationship between spirituality and health continues to grow. Spirituality significantly contributes to psychosocial adjustment to cancer and its treatment (Weaver & Flannelly, 2004). Soothill et al. (2002) suggested that spiritual well-being has been positively related not only to the ability to cope better while dealing with an illness, but also to the ability to enjoy life even in the midst of acute and chronic symptoms. Meraviglia (2004) found that for patients suffering from cancer, spirituality has a positive effect on physiological and physical well-being. In addition, meaning of life had a strong relationship with spirituality, and more time spent in prayer was related to better psychological well-being. McMillian and Weitzner (2000) also found a positive relationship between spirituality and quality of life. In the current study a positive relationship between patients' spirituality and their overall quality of life was also evident. Therefore, if patients are allowed to incorporate and continue to utilize spiritual beliefs and practices during their cancer treatment and recovery, their efforts could possibly improve overall functioning in physical, functional, social, and emotional well-being.

Perceived level of overall quality of life and subscales. Examination of patient overall quality of life resulted in elevated scores overall, indicating that the majority of participants in this study felt as though their current quality of life was good. There are many factors that may be contributing to their overall quality of life including: spirituality, level of

hope, severity of illness, current treatment, symptoms of their illness or treatment, and family support. Of the four attributes of quality of life, social well-being was endorsed the most by patients, followed by emotional well-being, physical well-being, and functional well-being.

Social well-being refers to individuals' perceived social support, intimacy, and relationships with friends and family members (Cella, 1994; Holland, 1992; Tope et al., 1993). Schipper (1990) defined it as social functioning which explains a patient's ability to maintain and keep up with social responsibility and entails the "desire for and ability to make contact with other individuals and be a part of the community" (p. 174). Therefore, one possible explanation for the more frequent endorsement of the social well-being attribute when compared to the other quality of life attributes is that although functional and physical changes occur in consequence to illness, the patients were able to maintain their social and familial relationships and continue to receive the social support that they desired and were used to.

Emotional well-being incorporates both negative and positive affective experiences by the patient (Cella, 1994). Responses and reactions that patients have to their cancer illness are very important because of the relationship and impact they have on the overall perceived quality of life (Davies et al., 2008; Newsom et al., 1996). For example, maladaptive thoughts, beliefs, and other cognitive distortions can impact a patient's emotional well-being (Levin et al., 2007). One possible explanation for why the emotional well-being attribute was endorsed more strongly is that the patients have incorporated more positive and hopeful attitudes and emotions toward their cancer illness and treatment. These hopeful and positive feelings may be a result of their overall optimism brought about by their faith and spirituality, but it also may be as a result of positive relationships with medical professionals, caregivers, friends, and family. Also, as mentioned earlier, these patients reported strong spiritual beliefs and attitudes. These

explanations would be consistent with the results of the current study which indicate that spirituality, hope, and earlier stages of cancer contribute to cancer patients' quality of life. Specifically, cancer patients who are hopeful, spiritual, and in the beginning stages of their cancer illness reported having greater quality of life.

In summary, of the four attributes of quality of life, social well-being and emotional well-being stood out as being most impactful on patients' overall quality of life. Although functional well-being and physical well-being were not reported to be as impactful on quality of life as social and emotional well-being, they still were reported to be important aspects of patient quality of life. For example, lowered physical abilities contribute to diminished functional abilities, such as ability to work, which may then alter social and emotional well-being. Being able to distinguish between particular components of quality of life and their possible relationship to the overall quality of life is important so that appropriate attention can be given to the dimensions that are negatively impacting the individual's overall quality of life and satisfaction. Practitioners can then address these areas more specifically and assist in alleviating problems in those particular domains (Cella, 1993; Tope et al., 1993).

Multiple Regression Analysis

In the present study cancer patients' hope, spirituality, age, gender, and stage of cancer were examined as predictors of patients' quality of life. The multiple regression analysis indicated that together hope, spirituality, age, gender, and stage of cancer did significantly predict overall quality of life in cancer patients, although not all of the variables were significant (i.e., gender and age).

Of the five variables examined, hope and spirituality were found to be the strongest predictors of quality of life. They were also positively correlated, indicating that a patient with

higher levels of hope will have a greater quality of life during the cancer illness and also that a patient with higher levels of spirituality will have improved quality of life. Age and gender did not contribute in meaningful ways to the predictive model. Stage of cancer was also predictive of quality of life in the negative direction, suggesting that patients in the beginning stages of cancer are more likely report greater quality of life.

Along with the literature, which indicates that spirituality and hope are essential and positive elements in patients' cancer experience (Fitchett et al., 1996; Koenig, 1997; Miller, 1997; Tope et al., 1993; Weaver & Flannelly, 2004; Zimpfer, 1992), the present study supports the importance of spirituality and hope in cancer patients' quality of life. The results indicated that cancer patients who reported higher spirituality and hope tended to experience a better quality of life. Through spirituality, cancer patients find meaning and purpose in life, and this assists them in understanding and coping with their cancer (Fowler, 1981; Jim et al., 2006). I believe that many of the factors fostering hope and spirituality and therefore overall quality of life of cancer patients include: love and support from family, friends, and religious leaders; setting and accomplishing goals; maintaining some independence and autonomy; positive relationships with caregivers and providers; camaraderie with other patients and survivors; personal determination; and uplifting memories, including times when past prayers and goals were met and achieved. Patients utilize their spirituality as a source of support, hope, and inner strength (Fowler, 1986; Weaver & Flannelly, 2004).

Chronic diseases like cancer can lead to changes in functioning within the patient. These changes are often unfavorable, including helplessness, negative emotionality, and lack of meaning and purpose. On the other hand, not all changes are negative; some resulting emotions can be positive, such as optimism and hopefulness (Gatuszka, 2006; Jim et al., 2006; Thompson

& Pitts, 1993). Spirituality and hope may be utilized as resources in health care. Because spirituality and hope were found to be the strongest predictors of patient quality of life, it is important that patients' spirituality and level of hopefulness continue to be addressed in clinical settings. Considering the beneficial aspects of spirituality and hope, not addressing or paying attention to these extra-therapeutic factors may potentially be unethical (Bergin, 1980).

Although a direct causal relationship between spirituality and hope and the quality of life of cancer patients cannot be determined by this study, the findings strongly support a meaningful relationship between these variables and patients' overall quality of life. Continued research is needed to fully comprehend and interpret the relationships among spirituality, hope, and cancer patient quality of life.

As with hope and spirituality, stage of cancer was found to have a meaningful but negative relationship with quality of life. Patients in the beginning stages of cancer tended to have a higher quality of life, and patients in the later stages of cancer tended to have a lower quality of life. Earlier stages of cancer offer better prognoses than later stages, because the spread of the disease is less pervasive in the earlier stages. Patients often experience fewer physical difficulties at earlier stages of the disease. A possible explanation of the relationship between stage of cancer and quality of life is that patients with later stages of cancer experience more physical and functional limitations. An alternative explanation for the negative relationship between stage of cancer and quality of life is that patients with advanced disease undergo more aggressive treatments, which also negatively impact patients' quality of life.

Although the primary purpose of this study was not to assess the relationship between various stages of cancer and the quality of life subscales, such dedicated examinations in the future would help to ascertain the nature of the relationships that may exist between stage of

cancer and the various identified facets of quality of life. It is important to note that many researchers have found that hope and hopelessness are present in patients at different times throughout their illness, stage of cancer, and treatment and that it is important for healthcare providers to listen attentively, allowing their patients to speak freely about their moods, feelings, and thoughts as they relate to their cancer, treatment, and prognosis (Lindholm et al., 2005). The causal effect of stage of cancer on quality of life cannot be ascertained with the present analysis. To confirm that earlier stages of cancer lead to better quality of life would require further research. The present study does support previous findings that patients in the beginning stages of cancer tend to report a better quality of life.

The relationship between age and quality of life has been mixed in the literature. Several authors have found no relationship between age and quality of life (Esbensen et al., 2004; Litwins et al., 1994; Whynes et al., 1994). Other authors have found a significant relationship between age and quality of life; some found a negative relationship (Krongrad, Litwin, Lai, & Lai, 1998), while others found a positive relationship (Payne, 1992; Roberts et al., 1992). In this study, age was found not to have a significant relationship with patient quality of life. One possible explanation that may be a factor contributing to a positive relationship between age and quality of life in some research studies is that of maturity and experience. Patients who have lived longer and obtained more life experiences may find patience and peace more easily than those who feel like their life is being taken from them and that they are too young to have to suffer or have a cancer illness. The lack of a significant relationship between age and quality of life in this study may suggest that individuals with cancer do not necessarily experience lower quality of life as a result of their older age.

As with the relationship between age and quality of life, the relationship between gender and quality of life has been unclear (Schag et al., 1994; Stanton et al., 2002; Zautra & Goodhart, 1979). In this study, gender was not significantly correlated with quality of life. One particular cause of the mixed outcomes of these particular variables is in the inherent differences between men and women. Many male patients may find it difficult to express emotion and admit how they are feeling. They may feel embarrassed to report feelings of fear, anxiety, and/or depression. They also may decline to admit more favorable feelings, such as peace, happiness, and joy. There also may be generational differences that may need to be accounted for in further research and exploration that may shed more light on the relationship between gender and quality of life. Furthermore, there may be other factors and variables that have greater impact on patients' quality of life that may discount or overshadow their particular gender (e.g., level of hope, spirituality, access to healthcare, and family and religious support). Similar to the interpretation regarding the lack of a relationship between age and quality of life, the lack of a relationship between gender and quality of life may be interpreted to point out that neither men nor women suffer a lower or higher quality of life due to their gender.

Conclusions

The clinical course of cancer varies from patient to patient. Cancer patients can experience one of four general courses: (a) long survival and cure, (b) period with no evidence of disease followed by recurrence, (c) no disease-free period as a result of no response to treatment, and (d) no primary treatment possible (Holland, 1989a). Regardless of the course, most cancer patients experience the detection of symptoms, receive a diagnosis, and obtain treatment, along with its side effects (Holland, 1989a), and therefore have physical, functional, social, and emotional changes as a result of their illness.

Quality of life is a multidimensional concept which includes patients' physical well-being, functional well-being, social well-being, and emotional well-being (Aaronson et al., 1994; Cella, 1998; Montgomery et al., 2002; Tope et al., 1993). Cancer patients' quality of life reflects the impact cancer has on each of these four domains. Individuals diagnosed with cancer encounter difficulties in their global quality of life. Examining the intricacies of their quality of life as they proceed through the course of cancer provides information regarding methods to provide the highest quality of life possible. Thus, as a patients' quality of life is examined, information regarding their strengths and weakness will be exposed. As this occurs, the patients, along with their family and health care providers, can begin to address these strengths and weakness, which will assist the patient in developing an improved quality of life. Hope and spirituality are two areas of patients' lives that are not addressed in the four domains. Therefore, their relationship with quality of life was examined. Research regarding cancer and the relationship between patients' quality of life and age, gender, and stage of cancer has been mixed, so these variables were also assessed for their potential impact on quality of life.

Previous research that addressed spirituality focused primarily on patients in later stages of the disease (Loscalzo & Brintzenhofeszoc, 1998; Swensen et al., 1993). The goal of the present study was to address cancer patients' overall quality of life during all phases of the disease. Patients who were participating in the study were at least one month post diagnosis to decrease the chances of their reporting a lower quality of life as a result of the acute stress they may experience within the first few weeks of finding out about the diagnosis (Gotay, 1984; Loscalzo & Brintzenhofeszoc, 1998). The patients' hope, spirituality, and stage of cancer predicted their overall quality of life. In the present study, patients with higher levels of hope and spirituality and earlier stages of cancer tended to experience better quality of life. This

supports hope, spirituality, and stage of cancer as important elements of the patient's cancer experience. Addressing and possibly encouraging hope and spirituality in cancer patients may be beneficial to their quality of life. Even though there is little that can be done about a patient's current stage of cancer, it continues to be important that patients and medical professionals be mindful of the patient's current cancer stage, address the cancer illness as soon as possible, and support the need for early detection and prevention.

Clinical Implications

Many cancer patients report that through their medical care and treatment their illness was assessed and reassessed, including an evaluation of the physical symptoms and discomforts. However, many patients have also stated that the spiritual, emotional, and existential aspects of their cancer illness were rarely a focus of care (Greisinger et al., 1996). This illuminates the difference between disease and illness: "disease is what happens to the body, and illness is how the disease manifests itself in a patient's daily life" (Mechanic, 1989, p. 60). The demands of current clinical practices, which are becoming increasingly competitive, as well as current educational practices and traditions, may lead to a primary focus on a systematic examination of a patient's body to assess the presence or development of disease. However, systematic examination of an individual's concerns about their quality of life, as well as less common factors that influence his or her quality of life, such as spirituality and hope, may be used to complement the disease assessment and facilitate an appropriate referral to another member of the healthcare team. A number of the participants in this study benefited from thoughtful referrals to psychologists, spiritual advisors, and chaplains, while other participants were able to return to their healthcare providers with specific questions in mind concerning their quality of life.

Many patients suffering from a cancer illness have already thought about their quality of life and find having a discussion with their healthcare providers not only appropriate but necessary. During this time with their doctors or other healthcare workers, patients can review their concerns, thoughts, and other emotions that they are experiencing. They can develop an understanding of how well they are coping, and work toward closure of these issues or develop a plan to initiate other elements that impact their quality of life such as hope, spirituality, and social support. Healthcare providers and professionals have an opportunity to help patients face challenges by trying to understand what they are experiencing as well as allowing the patient time to process and reflect. This can be achieved by focusing on the patient's quality of life and those factors that influence it.

Limitations

One limitation of this study is that the participants were not randomly selected; they were selected based upon willingness to participate in the study as well as meeting the standard participation requirements. In addition, the participants in this study were all fairly independent and mobile even though they were at differing stages of cancer and treatment. Participants with diminished mobility and independence may have had differing perceptions, hope, spirituality, and quality of life. Some of the participants may have filled out their surveys in the presence of significant others, which may have influenced how they chose to respond. Participants who fill out surveys such as these in the presence of family or friends may not respond as honestly as they would have if they were alone. They may not want their family members to know how they are really feeling or how the illness is really impacting them. There are particular questions on the surveys that address support systems and relationships that also may be a topic of concern for the patient and one that they may feel inclined to hide or falsify in order avoid family conflict.

Another limitation is that because there are many cancer classifications there are also many treatment variations among cancer patients. These variations may be a confounding factor within the study. The nature of the treatments experienced by the participants, such as chemotherapy, radiation therapy, and hormonal therapy, may restrict the generalizability of the results to all cancer patient populations. Differing treatments can cause differing changes within the patient, including functional and physical problems, loss of appetite, weight change, and shifts in motivation and energy levels.

Additionally, because the analysis is correlational, no conclusions can be drawn regarding causality (Hepper, Kivlighan, & Wampold, 1992). Therefore, it cannot be determined that higher levels of hope and spirituality cause patients to experience a better quality of life. It can be stated, however, that patients with higher levels of hope and spirituality tend to experience better overall quality of life.

All of the participants in the study were receiving treatment in hospitals in the Midwest region of the United States. This is a limitation in that it is a threat to external validity; it restricts the generalizability of the results to oncology patients in this region (Hepper et al., 1992). One reason for this particular limitation is due to possible cultural differences between this population and other regional populations. These differences may include education, level of religious and/or spiritual acculturation, social values, and age differences within this sample.

An additional limitation of this study pertains to the measures used to assess quality of life, hope, and spirituality. The results in the study reflect the quality of life, hope, and spirituality as measured by the Functional Assessment of Cancer Therapy-General (FACT-G), Hearth Hope Index (HHI), and Functional Assessment of Chronic Illness Therapy—Spiritual Well-being (FACIT-Sp). Other measures for the variables may elicit varying results.

Future Research

There were various questions that either went unanswered in the present study or that were left unaddressed that can be studied in future research. One particular question pertains to the different types of treatment that cancer patients receive and their impact on quality of life. Future researchers could also examine the quality of life before and after surgery as well as during radiation treatment, an area that was not examined during the present study.

Other researchers should also further explore the probable causal impact of stage of cancer on quality of life for those patients who experience multiple stages. One approach would be to assess patients' quality of life at various points throughout their treatment. For example, a researcher could assess patients' quality of life beginning shortly after the patient receives a diagnosis and continue to intermittently assess quality of life throughout the clinical course of cancer (i.e., as he or she progresses through the various stages of cancer). Additionally, little research has been done on levels of spirituality and hope across time. Does a cancer illness impact an individual's perceived level of spirituality or hope? Researchers could also assess individuals prior to the cancer illness if possible or at least at various stages as the cancer progresses to see if any changes in hope and spirituality occur.

In addition, future research concerning the correlations found among the predictor variables is recommended. In the present study, the relationship between hope and spirituality was examined as the primary interest, but the relationship between hope and gender, spirituality and gender, hope and age, and spirituality and age were not assessed as thoroughly. Future researchers can assist in increasing our understanding of the relationships among those variables.

Finally, the relationship between spirituality and quality of life can continue to be examined to provide further understanding of the nature of this relationship and its impact on the

patient throughout the cancer experience. Does lower quality of life diminish one's spirituality or does one's higher spirituality lead to better quality of life? Additional explorations into the nature of the relationships between spirituality and quality of life in cancer patients could help answer these questions.

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APPENDIX A: FUNCTIONAL ASSESSMENT OF CANCER (FACT)¹

Below is a list of statements that other people with your illness have said are important. Please circle or mark one number per line to indicate your response as it applies to the past 7 days.

<u>PHYSICAL WELL-BEING</u>	Not at all	A little bit	Some- what	Quite a bit	Very much
1) I have a lack of energy	0	1	2	3	4
2) I have nausea	0	1	2	3	4
3) Because of my physical condition, I have trouble meeting the needs of my family	0	1	2	3	4
4) I have pain	0	1	2	3	4
5) I am bothered by side effects of treatment	0	1	2	3	4
6) I feel ill	0	1	2	3	4
7) I am forced to spend time in bed	0	1	2	3	4
 <u>SOCIAL/FAMILY WELL-BEING</u>					
8) I feel close to my friends	0	1	2	3	4
9) I get emotional support from my family	0	1	2	3	4
10) I get support from my friends	0	1	2	3	4
11) My family has accepted my illness	0	1	2	3	4

12) I am satisfied with family communication about my illness	0	1	2	3	4
13) I feel close to my partner (or the person who is my main support)	0	1	2	3	4
14) I am satisfied with my sex life	0	1	2	3	4

EMOTIONAL WELL-BEING

	Not at all	A little bit	Some-what	Quite a bit	Very much
15) I feel sad	0	1	2	3	4
16) I am satisfied with how I am coping with my illness	0	1	2	3	4
17) I am losing hope in the fight against my illness	0	1	2	3	4
18) I feel nervous	0	1	2	3	4
19) I worry about dying	0	1	2	3	4
20) I worry that my condition will get worse	0	1	2	3	4

FUNCTIONAL WELL-BEING

	Not at all	A little bit	Some-what	Quite a bit	Very much
21) I am able to work (include work at home)	0	1	2	3	4
22) My work (include work at home) is fulfilling	0	1	2	3	4
23) I am able to enjoy life	0	1	2	3	4
24) I have accepted my illness	0	1	2	3	4
25) I am sleeping well	0	1	2	3	4
26) I am enjoying the things I usually do for fun	0	1	2	3	4

27) I am content with the quality of my life right now 0 1 2 3 4

¹From "The Functional Assessment of Cancer Therapy Scale: Development and validation of the general measure," by D. F. Cella, D. S. Tulsky, G. Gray, B. Sarafian, E. Linn, A. Bonomi, . . . J. Brannon, 1993, *Journal of Clinical Oncology*, 11, 570-579. Copyright 1997 by Cella. Reprinted with permission.

APPENDIX B: FUNCTIONAL ASSESSMENT OF CHRONIC ILLNESS THERAPY—
SPIRITUAL WELL-BEING (FACIT-Sp)²

Below is a list of statements that other people with your illness have said are important. Please circle or mark one number per line to indicate your response as it applies to the past 7 days.

	Not at all	A little bit	Some- what	Quite a bit	Very much
1) I feel peaceful	0	1	2	3	4
2) I have a reason for living	0	1	2	3	4
3) My life has been productive	0	1	2	3	4
4) I have trouble feeling peace of mind	0	1	2	3	4
5) I feel a sense of purpose in my life	0	1	2	3	4
6) I am able to reach down deep into myself for comfort	0	1	2	3	4
7) I feel a sense of harmony within myself	0	1	2	3	4
8) My life lacks meaning and purpose	0	1	2	3	4
9) I find comfort in my faith or spiritual beliefs	0	1	2	3	4
10) I find strength in my faith or spiritual beliefs	0	1	2	3	4
11) My illness has strengthened my faith or spiritual beliefs	0	1	2	3	4
12) I know that whatever happens with my illness, things will be okay	0	1	2	3	4

²From “Measuring spiritual well-being in people with cancer: The Functional Assessment of Chronic Illness Therapy—Spiritual Well-Being Scale (FACIT-Sp),” by A. H. Peterman, G. Fitchett, M. J. Brady, D. Pharm, and D. F. Cella, 2002, *The Society of Behavioral Medicine*, 24, 49-58. Copyright 1997 by Peterman. Reprinted with permission.

APPENDIX C: HERTH HOPE INDEX (HHI)³

Listed below are a number of statements. Read each statement and place an [X] in the box that describes how much you agree with that statement right now.

	Strongly Disagree	Disagree	Agree	Strongly Agree
1. I have a positive outlook toward life				
2. I have short and/or long range goals				
3. I feel all alone				
4. I can see possibilities in the midst of difficulties				
5. I have a faith that gives me comfort				
6. I feel scared about my future				
7. I can recall happy/joyful times				
8. I have deep inner strength				
9. I am able to give and receive caring/love				
10. I have a sense of direction				
11. I believe that each day has potential				
12. I feel my life has value and worth				

³From "Abbreviated instrument to measure hope: Development and psychometric evaluation," by K. Herth, 1992, *Journal of Advanced Nursing*, 17, 1251-1259. Copyright 1999 by Kaye Herth. Reprinted with permission.

APPENDIX D: DEMOGRAPHIC FORM

Quality of Life and Personal Development with Cancer

Please answer the following demographic information:

Today's Date: _____

Date of Birth: _____ Age: _____

Type of Cancer: _____

Gender: Male _____ Female _____

- 1) Current Cancer Stage (check one):
 - _____ Stage 0 (cancers are in remission or cured)
 - _____ Stage 1 (cancers are localized to one part of the body)
 - _____ Stage 2 (cancers are locally advanced)
 - _____ Stage 3 (cancers are locally advanced and have begun to spread)
 - _____ Stage 4 (cancers metastasized; spread to organs or other areas of the body)
 - _____ Uncertain of current cancer stage.

- 2) Education (highest level completed):
 - _____ 9th grade or less
 - _____ 10th - 11th
 - _____ high school graduate or G.E.D.
 - _____ some college/technical school
 - _____ college graduate (bachelors degree)
 - _____ graduate degree (masters/doctorate)

- 3) Ethnicity (check one):
 - _____ Caucasian American (non-Hispanic)
 - _____ African American
 - _____ Latino American
 - _____ Asian American
 - _____ Other _____

APPENDIX E: INFORMED CONSENT FORM

Information for Participants and Informed Consent

The purpose of this research is to examine how quality of life and personal development are related. For this project, you will be asked to complete three questionnaires regarding your present experiences of your quality of life and personal development. The questionnaires will ask you how you perceive life and various aspects of life. You will be asked to give basic demographic information on the page following the questionnaires. The questionnaires will take approximately 30 minutes for you to complete.

All demographic data and identifying information will remain confidential. All data will be kept completely confidential.

The foreseeable risks or ill effects from participation in this study are minimal. There is a small possibility that answering some of the questions on the questionnaire may evoke some feelings of anxiety. Should you experience any feelings of anxiety, there are counseling services available upon request through the Radiation Oncology Center and through Union Hospital.

There are no direct benefits to you for participation in this study; however, there are possible benefits to the profession of psychology and oncology, such as a better understanding of quality of life and personal development. Participants may gain some insight into their own behavior.

Participation in this research is voluntary. Participating or refusal to participate will in no way impact current treatment or medical care. You are free to withdraw your consent and to discontinue participation in the study at any time.

For one's rights as a research participant, the following persons may be contacted: Vicki Hammen, Vice-Chair on Indiana State University's Institutional Review Board, phone: (812) 237-8217, or visit <http://www.indstate.edu/irb/>.

I, _____, agree to participate in this project. The study has been explained to me, and my questions have been answered to my satisfaction. I have read the description of the present study, and I give my consent to participate. I understand that I will receive a copy of this consent form for future reference.

Participant's Signature

Date

Principle Investigator

Date

Principle Investigator:
Nathaniel Burt, Doctoral Student

Faculty Supervisor:
Dr. Eric Hampton

Counseling Psychology Program
Indiana State University
Terre Haute, IN 47809
(812) 235-4326

Committee Chair
Indiana State University
Terre Haute, IN 47809
(812) 237-2890