

Spiritual Growth and Decline Among Patients With Cancer

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Calhoun and Tedeschi (2006) defined trauma as an event that can “significantly challenge or invalidate important components of the individual’s assumptive world” (p. 3). Cancer can be conceptualized as a series of traumatic events, including diagnosis, the physical and emotional stressors of treatment, and the uncertainty of long-term outcomes (Cordova, 2008). A growing body of literature documents significant psychological impairment among cancer survivors that includes depression, anxiety, impaired occupational functioning, and disrupted interpersonal relationships (Documet, Trauth, Key, Flatt, & Jernigan, 2012; Howren, Christensen, Karnell, & Funk, 2013; Kangas, Henry, & Bryant, 2002).

Religious faith is a common coping resource that can play an important role in how patients conceptualize, manage, and resolve trauma (Balboni et al., 2007; Pargament, Desai, & McConnell, 2006). Tix and Frazier (1998) defined religious coping as “the use of cognitive and behavioral techniques, in the face of stressful life events, that arise out of one’s religion or spirituality” (p. 411). Individuals use positive (e.g., seeking spiritual support) and negative (e.g., religious struggle, doubt) religious coping strategies to manage traumatic or challenging life events (Lavery & O’Hea, 2010; Sherman & Simonton, 2001).

Mahoney, Krumrei, and Pargament (2006) believe that trauma can provoke changes in spirituality, religious beliefs, and religious practices. Spiritual transformation can be defined as religious or spiritual change that includes three facets (i.e., a cause or trigger event, the nature and characteristics of the transformation, and the religious and nonreligious consequences of the change) (Smith, 2006). The National Spiritual Transformation Study (Davis, Smith, & Marsden, 2005; Smith, 2006) found that among 1,328 adults interviewed, half ($n = 664$) reported having a religious or spiritual transformation at some point. A serious illness or accident was the primary impetus to the participants’ experiences.

Purpose/Objectives: To investigate spiritual transformation among patients with cancer.

Design: Longitudinal.

Setting: A university medical center in the midwestern United States.

Sample: 47 adult cancer survivors.

Methods: Patients were asked about spirituality, religious and spiritual importance, religious coping, and spiritual gain and decline at baseline as well as nine months post-treatment.

Main Research Variables: Religious importance, religious coping, and spiritual gain or decline.

Findings: Positive religious coping at baseline predicted spiritual growth at the nine-month follow-up point. Spiritual decline was predicted by negative religious importance. A bivariate relationship existed between increased levels of negative religious coping and increased spiritual growth.

Conclusions: Positive religious coping strategies may influence spiritual transformation.

Implications for Nursing: Healthcare providers who support a strengths-based perspective on human functioning may be equipped to perform research on spiritual or religious interventions for patients with cancer.

Knowledge Translation: Greater use of spiritual resources, even if conceptualized as negative religious coping mechanisms or initial spiritual decline, may contribute to increased levels of spiritual growth later. When acting as expert companions, healthcare providers may facilitate spiritual growth by addressing spiritual transformation, creating safe environments for exploring spirituality, becoming familiar with different religious faiths, and seeking appropriate consultation and referrals for patients.

A diagnosis or recurrence of cancer may prompt a reassessment of spiritual values (Feher & Maly, 1999; Ironson & Kremer, 2009; Mulkins & Verhoef, 2004). Researchers have discussed changing value systems during the cancer experience (Andrykowski & Hunt, 1993). As individuals adjust to a diagnosis of cancer, they ascribe meaning to the threat of death as a way

to cope with the experience (Taylor, 1983). Religious and spiritual coping resources are particularly salient during the initial stage of diagnosis because spiritual beliefs can provide a framework for gaining perspective or understanding the illness (Holland et al., 1999). How those changes in spirituality occur over time and how different coping styles affect spiritual transformation remains uncertain.

Spiritual decline is a loss or weakening of spiritual associations related to worldviews, goals, relationships with others, and sense of self (Cole, Hopkins, Tisak, Steel, & Carr, 2008). The concept of spiritual decline has received minimal attention in the literature. Falsetti, Resick, and Davis (2003) noted that the majority (50%) of individuals reported no change in spiritual beliefs following a trauma that resulted in post-traumatic stress disorder, 30% experienced spiritual decline, and only 20% reported becoming more religious. In Cole et al.'s (2008) study of 253 cancer survivors, spiritual growth and decline were reported. Spiritual growth was associated with positive affect, intrinsic religious orientation, and positive coping; spiritual decline was related to depression, negative affect, and negative coping.

The purpose of the current study was to investigate spiritual transformation longitudinally among patients with cancer. The authors sought to determine the extent that patients with cancer experience spiritual growth or decline within the first year of treatment; to consider the relationship between spiritual transformation and demographic variables (e.g., age, gender, stage of cancer), self-reported religious or spiritual importance, and religious coping; and to determine the importance of religion, spirituality, and religious coping.

Methods

Design

A research nurse or physician identified patients for this study from clinic records before the start of treatment. Once identified, a research team member approached potential participants, explained the study, and obtained informed consent. Consenting participants completed the baseline interview before or shortly after the start of treatment. Most participants completed the interview in person, but several participants did it by telephone because of scheduling difficulties. All follow-up interviews were completed by telephone. Verbal responses provided in the interviews were written and transcribed by research team members. The study was approved by the University of Iowa institutional review board.

Participants

Participants in the current study were part of a larger longitudinal study examining psychosocial outcomes

from cancer. Participants were receiving treatment at the University of Iowa Hospitals and Clinics in Iowa City. Eighty-seven patients with cancer completed pretreatment interviews. Follow-up interviews took place about nine months after baseline. The current study examines the 47 patients who completed the pretreatment and follow-up interviews. Participants did not complete the follow-up interview because they were unable to be contacted ($n = 16$), were deceased ($n = 11$), refused participation ($n = 7$), or were too ill ($n = 6$).

The sample was 62% female ($n = 29$) with a mean age of 51.44 years (see Table 1). Participants were diagnosed with leukemia, lymphoma, multiple myeloma, and gastrointestinal (e.g., pancreatic, esophageal) cancers. For the majority of participants, it was the first diagnosis of cancer. For the follow-up interview, time since diagnosis was 341 days, with a standard deviation of 515 days.

Instruments

The **Spiritual Transformation Scale (STS)** was used to assess spiritual transformation following diagnosis and treatment of cancer (Cole et al., 2008). The 42-item questionnaire measures spiritual growth and decline. The questionnaire uses a seven-point scale ranging from 1 (it is not true for you) to 7 (it is true for you a great deal). Example items include, "My way of looking at life has changed to be more spiritual," and, "I feel I have lost important spiritual meaning that I had before." Participants in the current study completed the STS at the nine-month follow-up interview.

Construct validity has been demonstrated by the positive correlation between spiritual growth and post-traumatic growth, positive affect, intrinsic religiosity, and positive religious coping as well as the negative correlation between spiritual decline and positive affect, intrinsic religiosity, and depression (Cole et al., 2008). Spiritual growth and spiritual decline were found to be unrelated ($r = -0.03$, $p > 0.05$) (Cole et al., 2008). The STS has good internal consistency reliability (spiritual growth, $\alpha = 0.98$; spiritual decline, $\alpha = 0.86$) and test-retest reliability (spiritual growth, $r = 0.85$; spiritual decline, $r = 0.73$) after a two-week time period. For the current study, the coefficient alpha for spiritual growth was 0.98 and 0.85 for spiritual decline.

The **Brief Religious Coping Scale (RCOPE)** was used to assess positive and negative religious coping (Pargament et al., 1998). The 14-item measure contains examples of positive religious coping (e.g., religious forgiveness, seeking spiritual support, collaborative religious coping, spiritual connection, religious purification, benevolent religious appraisal) and negative religious coping (e.g., spiritual discontent, punishing-God reappraisal, interpersonal religious discontent, demonic reappraisal, reappraisal of God's powers). Participants responded with the extent to which they engage in

Table 1. Sample Characteristics (N = 47)

Characteristic	\bar{X}	SD	Range
Time since diagnosis (months)	11.36	17.16	–
Age at interview (years)	51.44	14.1	55–78
Characteristic	n		
Gender			
Male	18		
Female	29		
Ethnicity			
Caucasian	46		
Hispanic	1		
Education			
Below high school level	1		
High school degree	12		
Some college	14		
College degree	15		
Graduate degree	5		
Relationship status			
Married or cohabitating	36		
Single	6		
Divorced	4		
Other	1		
Religious affiliation			
Protestant	20		
Catholic	13		
No affiliation	6		
Christian ^a	4		
Spiritual	1		
Other	3		
Diagnosis			
Multiple myeloma	15		
Leukemia	13		
Lymphoma	12		
Gastrointestinal cancers	7		
Diagnosis of cancer			
First diagnosis	34		
Recurrence	13		
Cancer treatment			
Bone marrow transplantation	34		
Chemotherapy alone	9		
Radiation	3		
Surgery	1		
Patient with gastrointestinal cancer: Bone marrow transplantation disease status (N = 35)			
Chemosensitive clinically persistent disease	19		
Chemosensitive under good control	12		
Persistent disease showing some chemoresistance	4		
Gastrointestinal cancer stage (N = 10)			
Adjuvant with possibility of cure	8		
Incurable treatment group	2		

^a No denomination specified

religious coping methods on a four-point scale from 0 (not at all) to 3 (a great deal). Participants in the current study completed the Brief RCOPE at baseline.

Pargament et al. (1998) completed exploratory and confirmatory factor analyses with three diverse samples coping with stress, including individuals involved in the Oklahoma City bombings (n = 296), college students with major stress (n = 540), and older adult patients suffering from serious illnesses (n = 551). Positive and

negative religious coping scores have been found to be related ($r = 0.17$, $p < 0.001$), although in a relatively modest relationship. Positive religious coping has been linked to higher levels of stress-related growth and better religious outcomes. Negative religious coping was related to higher emotional distress, reduced physical health, and higher levels of psychosomatic symptomatology. Coefficient alphas for positive and negative scales have been reported as 0.87 and 0.69, respectively (Pargament et al., 1998). In the current study, the coefficient alpha was 0.94 for positive religious coping and 0.77 for negative religious coping.

Religious importance was assessed by an investigator-developed measure that consisted of two items that calculated personal and family religious importance. The items were, "How important was religion in your family while you were growing up?" and, "How important is religion to you currently?" The scale ranged from 1 (not at all) to 10 (extremely). Higher scores represented higher levels of family and personal religious importance. Scores from the two items were summed to form a composite scale. The coefficient alpha for the two-item scale was 0.66. Participants in the current study completed religious importance questions at the baseline interview.

Results

Assumptions of parametric data were examined before study analyses were conducted. Frequency distributions, box plots, scatter plots, and skewness ratios were used to examine whether data were distributed normally. Some distributions exceeded the ± 2 skew ratio (z score), suggesting a departure from normality. The distributions for negative religious coping and STS decline were positively skewed, and outliers were present in the variable distributions. Because of the presence of outliers and non-normality, the variable distributions were winsorized (a more contemporary statistical technique that addresses the criticisms of common transformation approaches such as Log_{10} and square root) (Erceg-Hurn & Mirosevich, 2008; Wilcox & Keselman, 2003). Winsorized mean and standard deviation are achieved by taking extreme scores and recoding them to a less extreme score. Data were re-analyzed using winsorized means, and the differences were minimal. Therefore, for ease of interpretability, the original data were retained.

Mean differences for STS scores, measured nine months post-treatment, were compared to STS scores reported in the literature. The current sample's spiritual growth ($\bar{X} = 3.85$, $SD = 1.74$) and spiritual decline ($\bar{X} = 1.68$, $SD = 0.87$) scores were consistent with Cole et al.'s (2008) mixed sample of patients with cancer (spiritual growth $\bar{X} = 3.76$, $SD = 1.7$; spiritual decline $\bar{X} = 1.46$,

SD = 0.74). Positive (\bar{X} = 12.21, SD = 7) and negative (\bar{X} = 1.64, SD = 2.5) religious coping scores for the current sample were comparable to Phelps et al.'s (2009) sample of 345 patients with advanced cancers (positive religious coping \bar{X} = 11.1, SD = 6.4; negative religious coping \bar{X} = 2, SD = 3.5).

The relationships between demographic and medical variables and spiritual transformation were examined by correlation, independent sample t test, and analysis of variance. No mean differences were found for spiritual growth or spiritual decline based on gender or age ($p > 0.05$). Mean differences for spiritual growth or spiritual decline because of marital status, education, and religious affiliation were nonsignificant ($p > 0.05$). In addition, no differences were found in spiritual growth or decline because of diagnosis, disease status, disease group, or treatment received ($p > 0.05$). Time since diagnosis also was unrelated to study variables ($p > 0.05$). Correlation coefficients revealed that spiritual growth was related to positive and negative religious coping as well as religious importance. Spiritual decline was negatively related to positive religious coping and religious importance. See Table 2 for correlation coefficients for study variables.

The contribution of religious variables, including religious endorsement and religious coping, to spiritual transformation was addressed by hierarchical regression (see Table 3). For the first regression, age and gender were entered into block one, religious importance into block two, and positive religious coping into block three; the dependent variable was spiritual growth. The overall model was significant ($F [4, 42] = 6.9, p < 0.001$), with predictor variables accounting for 40% of the variance in spiritual growth. With all variables entered into the model, positive religious coping ($\beta = 0.43, p < 0.01$) uniquely predicted spiritual growth and accounted for 9% of the variance in spiritual growth. Although religious importance accounted for 25% of the variance in spiritual growth with all variables entered into the regression model, it was not a significant predictor of spiritual growth ($\beta = 0.19, p > 0.05$).

For the second regression model, age and gender were entered into block one, religious importance into block two, and negative religious coping into block three. Spiritual decline was the dependent variable. The overall model was not significant ($F [4, 42] = 2.5, p < 0.055$), but the predictor variable accounted for 19% of the variance is spiritual decline. Religious importance significantly predicted spiritual decline ($\beta = -0.39, p < 0.01$) and accounted for 15% of the variance in spiritual decline. Regression analyses also were conducted without age and gender entered into regression models. Primary results did not differ when age and gender were not included in the analyses.

Discussion

The current study explored spiritual transformation in a sample of predominantly Christian patients with cancer. Positive religious coping at baseline predicted spiritual growth at the nine-month follow-up interview. The relationship between positive religious coping and spiritual growth suggests that the successful pretreatment use of spiritual resources contributes to spiritual growth. When positive religious coping was entered into the regression model, the relationship between religious importance and spiritual growth decreased and became nonsignificant. Although a formal test of mediation was not completed in this study because of sample size, results suggest that positive religious coping may play a more pronounced role than religious importance in the development of spiritual growth. Spiritual decline was predicted by a negative relationship with religious importance; negative religious coping did not appear to affect the development of spiritual decline. An unexpected finding also emerged: A bivariate relationship existed between increased levels of negative religious coping and increased spiritual growth.

Cole et al. (2008) and Smith (2006) noted similar findings that spiritual growth was positively associated with positive religious coping. Enacting positive

Table 2. Descriptive Statistics and Correlations of Study Variables (N = 47)

Variable	\bar{X}	SD	Range	α	Correlations			
					1	2	3	4
Religious importance	13.8	4.9	0–20	0.66	–	–	–	–
Positive religious coping (Brief RCOPE)	12.21	7	0–21	0.94	0.73**	–	–	–
Negative religious coping (Brief RCOPE)	1.64	2.5	0–21	0.77	0.16	0.38**	–	–
Spiritual growth (STS)	3.85	1.7	1–7	0.98	0.55**	0.59**	0.31*	–
Spiritual decline (STS)	1.68	0.87	1–7	0.85	–0.39**	–0.41**	–0.17	–0.25

* $p < 0.05$; ** $p < 0.01$
RCOPE—Religious Coping Scale; STS—Spiritual Transformation Scale
Note. Correlations are zero order. Means for STS are based on item averages.

Table 3. Regression Coefficients for Religious Coping and Importance Predicting Spiritual Transformation (N = 47)

Variable	B	SE B	β	R	R ²	Δ^2	F	df
Spiritual growth								
Age	−0.04	0.02	−0.11	0.28	0.08	0.08	1.8	2,44
Gender	−14.3	13.1	−0.14	—	—	—	—	—
Religious importance	1.9	1.91	0.19	0.56	0.31	0.24	14.7	1,43***
Positive religious coping	3.1	1.28	0.43*	0.63	0.4	0.09	6	1,42**
Spiritual decline								
Age	−0.08	0.1	−0.12	0.19	0.04	0.04	0.84	2,44
Gender	−2.2	2.9	−0.11	—	—	—	—	—
Religious importance	−0.75	0.29	−0.39**	0.43	0.18	0.15	7.6	1,43**
Negative religious coping	−0.41	0.53	−0.11	0.44	0.19	0.01	0.58	1,42

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

SE—standard error

Note. In regression models, age and gender were entered into the first block, religious importance into the second block, and religious coping into the third block.

religious coping before trauma occurs may facilitate a reevaluation of life assumptions and priorities during the trauma. Positive religious coping may serve as an important mechanism to help spiritual transformation take place later. Cole et al.'s (2008) study also found that self-reported religious importance was positively associated with spiritual growth. When all variables were entered into the regression model, the current study found a relationship between increased levels of religious importance and lower levels of spiritual decline, which differs from Cole et al.'s (2008) findings. The finding suggests that endorsing religious beliefs may buffer a loss of those beliefs. Strong religious importance may help individuals grow in spirituality, whereas weak religious importance may lead to spiritual decline.

Understanding factors that affect spiritual transformation could have implications for clinical interventions because spiritual transformation contributes to spiritual and psychological adjustment (Cole et al., 2008; Visser, Garssen, & Vingerhoets, 2010). Research suggests that an individual's spiritual belief system may change as a result of trauma (Cole et al., 2008; Pargament et al., 2006). The current study enhances the understanding of spiritual decline, spiritual growth, and how healthcare providers may aid patients in spiritual transformation.

Spiritual decline, as conceptualized in the current study, is similar to but distinct from another term used in the literature, spiritual trauma. Mahoney et al. (2006) defined spiritual trauma as a stressful event that is not only unpredictable and devastating, but also results in a negative spiritual experience. Participants in the current study who reported spiritual decline also may have perceived cancer as a spiritual trauma. The spiritual decline may be explained, in part, by the religious variables (e.g., religious coping, religious importance) examined

in the current study. Although religious importance and religious coping were found to be related to spiritual growth and decline, additional research must focus on other mechanisms and psychosocial variables (e.g., personality characteristics, perceived social support) to fully understand the process of spiritual transformation in patients with cancer.

Spiritual growth has a complex relationship with religious coping. As demonstrated in previous literature and the current study, positive religious coping predicts spiritual growth (Cole et al., 2008). However, a bivariate relationship also exists between increased levels of negative religious coping and increased spiritual growth, which could be explained by the stress mobilization effect (Mahoney et al., 2006). In the context of spiritual struggle, the stress mobilization effect postulates that, during a trauma, increased use of spiritual resources is related to increased spiritual struggles, positive spiritual coping, and stress-related psychological and spiritual growth (Mahoney et al., 2006). Greater use of spiritual resources, even if conceptualized as negative religious coping mechanisms or initial spiritual decline, may contribute to increased levels of spiritual growth later (Cole et al., 2008).

Individuals may be more likely to seek sources of support when they experience a loss of religious meaning (Fontana & Rosenheck, 2005). The burden of cancer may be underestimated when its impact on spirituality is ignored (Whitford, Olver, & Peterson, 2008). Specific methods to promote or facilitate spiritual growth remain largely absent from the literature because of the lack of research examining the relationship between spiritual transformation and adjustment to major life stressors, such as cancer. However, researchers have discussed the facilitation of post-traumatic growth.

Tedeschi and Calhoun (2009) discussed how healthcare providers can serve as expert companions. An expert companion is a healthcare provider, such as a nurse, who focuses on uncovering strategies (e.g., paying attention to positive religious coping for moving beyond the stressful aspects of disease). An expert companion helps the patient reconsider and reconstruct ideas, beliefs, and goals. For example, expert companions will “notice and remark about the strengths and changes that come from the struggle” (Tedeschi & Calhoun, 2009, p. 225). A thorough understanding of patient religious beliefs may help uncover hidden strengths, such as increased community support. Healthcare providers can address spiritual transformation, create safe environments for exploring spirituality, become familiar with different religious faiths, and seek appropriate consultation and referrals (e.g., religious leaders) for patients.

Limitations

Several limitations exist in the current study. Spiritual growth and decline scores measure spiritual transformation, not spiritual development (Cole et al., 2008). Spiritual transformation includes increased and decreased spirituality, suggesting change in the fluid dimensions of spiritual life. Therefore, highly spiritual people or individuals who are not spiritual may show no spiritual growth or spiritual decline because no change occurred. In addition, the current sample had a high attrition rate, although such rates are not uncommon for the population given the severity of treatments received. Because a significant number of participants did not complete the follow-up interview because of death or illness, the final sample may have consisted of patients who had better success with cancer treatment, so generalizability to all prognoses may be limited. The sample was comprised of predominantly Caucasian, married, and educated women who identified as Christians. Therefore, results may not generalize to individuals who differ from those demographic characteristics, particularly religious affiliation. Because of the small sample size, advanced statistics (e.g., formal tests of moderation, mediation) could not be used, and simple regressions were used to examine research questions. An increased possibility of type 1 error exists because of the multiple statistical tests performed.

Implications for Nursing Practice

Nurses may be the first to recognize or identify sources of spiritual struggle because of their consistent contact with patients. The authors believe that healthcare providers should acknowledge spirituality as a coping skill and inquire about patients’ religious beliefs. Through appropriate referrals, nurses may provide additional sources of support for patients experiencing a loss of religious meaning (Fontana & Rosenheck, 2005). Those sources of support should include healthcare providers who are expert companions as well as religious leaders (Tedeschi & Calhoun, 2009). Healthcare providers and religious leaders espousing a strengths-based perspective on human functioning may be well equipped for intervention and research with this population.

Future Research

The current study adds to the literature examining spiritual transformation among samples of patients with cancer. This study is the first to longitudinally examine types of religious coping as predictors of spiritual transformation. Additional research is needed to understand spiritual transformation as a reaction to trauma, and the impact of spiritual growth and spiritual decline on psychological adjustment and well-being. The factors (e.g., religious importance, religious coping, psychosocial variables) that determine whether an individual experiences spiritual growth or spiritual decline as a result of trauma also require additional research. Researchers must conduct longitudinal studies to understand the long-term course of spiritual transformation. Research also should focus on religious- and spiritual-based psychological interventions designed for patients with cancer.

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