

Original Article

A Comparison of Two Spirituality Instruments and Their Relationship With Depression and Quality of Life in Chronic Heart Failure

David B. Bekelman, MD, MPH, Carla Parry, PhD, Farr A. Curlin, MD, Traci E. Yamashita, MS, Diane L. Fairclough, DrPH, and Frederick S. Wamboldt, MD
Denver VA Medical Center (D.B.B.), Denver, Colorado; Division of General Internal Medicine (D.B.B., T.E.Y.), Division of Health Care Policy and Research (C.P.), Colorado Health Outcomes Program (D.L.F.), and Department of Psychiatry (F.S.W.), University of Colorado Denver School of Medicine, Aurora, Colorado; Section of General Internal Medicine (F.A.C.), MacLean Center for Clinical Medical Ethics, University of Chicago, Chicago, Illinois; Department of Biostatistics and Informatics (D.L.F.), Colorado School of Public Health, Aurora, Colorado; and Division of Psychosocial Medicine (D.B.B., F.S.W.), National Jewish Health, Denver, Colorado, USA

Abstract

Spirituality is a multifaceted construct related to health outcomes that remains ill defined and difficult to measure. Spirituality in patients with advanced chronic illnesses, such as chronic heart failure, has received limited attention. We compared two widely used spirituality instruments, the Functional Assessment of Chronic Illness Therapy—Spiritual Well-Being (FACIT-Sp) and the Ironson-Woods Spirituality/Religiousness Index (IW), to better understand what they measure in 60 outpatients with chronic heart failure. We examined how these instruments related to each other and to measures of depression and quality of life using correlations and principal component analyses. The FACIT-Sp measured aspects of spirituality related to feelings of peace and coping, whereas the IW measured beliefs, coping, and relational aspects of spirituality. Only the FACIT-Sp Meaning/Peace subscale consistently correlated with depression ($r = -0.50$, $P < 0.0001$) and quality of life ($r = 0.41$, $P = 0.001$). Three items from the depression measure loaded onto the same factor as the FACIT-Sp Meaning/Peace subscale ($r = 0.43$, -0.43 , and 0.71), whereas the remaining 12 items formed a separate factor (Cronbach's $\alpha = 0.82$) when combined with the spirituality instruments in a principal component analysis. The results demonstrate several clinically useful constructs of spirituality in patients with heart failure and suggest that psychological and spiritual well-being, despite some overlap, remain distinct phenomena. J Pain Symptom Manage 2010;39:515–526. © 2010 U.S. Cancer Pain Relief Committee. Published by Elsevier Inc. All rights reserved.

This study was funded by the Johns Hopkins Center for Complementary and Alternative Medicine; the National Center for Complementary and Alternative Medicine, National Institutes of Health; and the University of Colorado Denver Hartford/Jahni-gen Center of Excellence in Geriatric Medicine. The views in this article are those of the authors

and do not necessarily reflect the views of the Department of Veterans Affairs.

Address correspondence to: David Bekelman, MD, MPH, Denver VA Medical Center, Research (151), 1055 Clermont Street, Denver, CO 80220, USA. E-mail: david.bekelman@ucdenver.edu

Accepted for publication: August 29, 2009.

Key Words

Spirituality, quality of life, depression, questionnaires, measurement, heart failure

Introduction

Spirituality is a complex, multifaceted construct that is challenging to define and measure.¹ It may be defined broadly as “the way in which people understand their lives in view of their ultimate meaning and value.”² Measuring spirituality is difficult, in part, because of the multiple domains “spirituality” encompasses and the varied ways in which people construct and interpret the concept of spirituality. For example, spirituality may include a system of beliefs or set of rituals as part of an organized religion, namely, the strength or comfort derived from one’s faith; the degree to which a relationship with a higher power has been internalized; existential well-being; or a sense of meaning, peace, or well-being. Spirituality is related to religion, which may be defined as “a set of beliefs, practices, and language that characterizes a community that is searching for transcendent meaning in a particular way, generally on the basis of belief in a deity.”³ Because spirituality has been defined in many different ways, it has also been measured using numerous different approaches.

Contemporary measures of spirituality have been associated with a variety of health outcomes and quality-of-life domains. Aspects of spirituality have been associated with lower levels of depression, and spiritual well-being has been shown to be associated with overall quality of life, even after accounting for psychological and physical well-being.^{4–8} In a multivariate model, spirituality, but not religiosity, was an important predictor of self-appraised good health, after adjusting for quality of life, physical functioning, age, race, and depression.⁹ Religiosity is associated with less morbidity and mortality, but the mechanism of this association and whether it is a causal relationship is unclear.^{10–14}

Spirituality in outpatients with advanced chronic illnesses, such as chronic heart failure, has received limited attention. Chronic heart failure is a leading cause of disability, hospitalization, death, and health care costs in the

United States. Nearly 5 million Americans have chronic heart failure, and the prevalence continues to increase as the population ages.¹⁵ Between 20% and 30% of patients with heart failure are depressed, and depression in heart failure is associated with worse physical functioning, poorer quality of life, and higher costs and mortality. Spirituality in patients with heart failure is related to adjustment,¹⁶ depression,⁶ and quality of life.¹⁷ Thus, a deeper understanding of the relevance of spirituality to outpatients with heart failure, how to measure spirituality in this population, and of the relationships between different measures of spirituality and depression and quality of life is important.

A critical view of spirituality measures suggests that they are corrupted by measures of positive character traits and psychological states, thereby confounding spiritual well-being with psychological well-being.¹⁸ For example, individuals who score high on the Functional Assessment of Chronic Illness Therapy—Spiritual Well-Being (FACIT-Sp) instrument, a popular instrument for measuring spirituality, have been found to have less depression^{6,19} and suicidality and to be less likely to desire help in hastening their death.²⁰ Koenig suggests that such findings are spurious because they are tautological: “Research that documents an association between spirituality defined this way and positive mental health, is meaningless since constructs measured with the same or similar items will always be correlated with one another.”¹⁸

Despite the widespread study of spirituality and health outcomes, few studies beyond the original psychometric validation studies have compared different spirituality instruments to understand the specific aspects of spirituality measured, and even fewer studies have explicitly sought to explore the extent to which spirituality measures may overlap with measures of psychological constructs. In this study, we compared two spirituality instruments—the FACIT-Sp and the Ironson-Woods Spirituality/Religiosity Index (IW)—in 60 outpatients with chronic heart failure. We chose these

instruments because both have been widely used and have demonstrated validity and reliability in previous psychometric testing.^{21,22} In addition, they are uniquely suited to this inquiry because they appear to measure both the same and different aspects of spirituality/religiosity. For example, both instruments measure “sense of peace” and “faith,” but only the IW measures “religious behavior.” Thus, it would be informative to see if these constructs indeed measure the same or different information when used in a single population. Furthermore, the FACIT-Sp has been criticized for measuring psychological well-being rather than spiritual well-being.¹⁸ The purpose of this study was to compare the explicit domains and latent constructs measured by these two spirituality instruments and to examine their associations with measures of depression and quality of life.

Methods

Study Population and Design

A cross-sectional study in outpatients with heart failure was conducted between August 2004 and April 2005. Participants were recruited from cardiology clinics at an academic-affiliated community hospital and a tertiary care academic referral hospital in Baltimore, Maryland. Eligible study participants were 60 years or older and had been diagnosed by a cardiologist as having congestive heart failure (New York Heart Association (NYHA) Functional Class II, III, or IV). Patients were excluded if they were diagnosed with dementia, were unable to understand the study protocol or provide informed consent, or were on a heart transplant list. At the study visit, participants completed surveys to assess spiritual well-being, heart failure-related health status, and depressive symptoms. Detailed descriptions of the study have been published elsewhere.⁶ The study was approved by the Institutional Review Board at the Johns Hopkins Bloomberg School of Public Health.

Measurements

Spirituality was assessed using two instruments, the FACIT-Sp and the IW (see tables in Results for instrument item lists). The FACIT-Sp is a 12-item self-report measure that

assesses overall spiritual well-being (scale range 0–48; higher scores signifying greater spiritual well-being). The instrument includes two subscales, “Meaning/Peace” (Items 1–8) and “Faith” (Items 9–12). The Meaning/Peace subscale measures a sense of meaning, peace and harmony, and purpose in life. The Faith subscale assesses the relationship between illness, faith, and spiritual beliefs, and how one finds solace in one’s faith.²¹ The instrument had high internal consistency in the original validation study (Cronbach’s alpha for total scale: 0.87; for Meaning/Peace subscale: 0.81; for Faith subscale: 0.88), which included 1,617 subjects, 83.1% of whom had cancer and 16.9% of whom had human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS).²¹

Immediately after the FACIT-Sp, participants completed the IW, a 25-item self-report instrument that measures spirituality in both the traditional religious and private spiritual dimensions. The IW contains four subscales, described as “Sense of Peace” (Items 1–9), “Faith in God” (Items 10–15), “Religious Behavior” (Items 16–20), and “Compassionate View of Others” (Items 21–25). This instrument was validated in a study of 279 people living with HIV/AIDS (Cronbach’s alpha for Sense of Peace: 0.94; Faith in God: 0.93; Religious Behavior: 0.87; and Compassionate View of Others, two-item: 0.87).²²

Depression was measured, as it is an important indicator of psychological well-being. We used the Geriatric Depression Scale-Short Form (GDS-SF), a self-report, reliable, and valid screening tool for current depression in this population.^{23,24} The GDS is widely used in elderly, medically ill populations because it excludes somatic symptoms of depression while maintaining sensitivity.²⁵ The scale range is from 0 to 15, with a higher score indicating a greater number of depressive symptoms. A score greater than 4 is 60% sensitive and 89% specific for a diagnosis of depressive disorder.²⁶ The scale has high internal consistency (Cronbach’s alpha: 0.80).²⁶

Heart failure-related quality of life was measured using the quality-of-life subscale of the self-reported Kansas City Cardiomyopathy Questionnaire (KCCQ). The quality-of-life subscale of the KCCQ has been validated and is scored from 0–100, with a higher score

indicating better quality of life.²⁷ It includes the following items: 1) “Over the past 2 weeks, how much has your heart failure limited your enjoyment of life?” Response items are as follows: extremely, quite a bit, moderately, slightly, and not at all; and 2) “If you had to spend the rest of your life with your heart failure the way it is right now, how would you feel about this?” Response items are as follows: not at all satisfied, mostly dissatisfied, somewhat satisfied, mostly satisfied, and completely satisfied. A third item asks about depression symptoms. To specifically ascertain quality of life rather than depression, we excluded the question on depression that is typically included in this subscale.

Statistical Analyses

To confirm the internal consistency of the FACIT-Sp and IW subscales, we calculated the standardized Cronbach’s coefficient alpha of the subscales. Cronbach’s alpha reflects the degree to which all of the items pertain to a uniform concept. Pearson correlations were used to assess the FACIT-Sp and IW between- and within-subscale associations as well as the associations between the spirituality subscales with depression (GDS-SF) and quality of life (KCCQ subscale). To further clarify the dimensions of spirituality/religiosity measured by the FACIT-Sp and IW scales, a principal component analysis with varimax rotation was performed on the 37 combined items from these instruments. The number of factors was chosen based on the examination of the scree plots, percentage of variability explained, and interpretability. We then examined the overlap between psychological well-being and spiritual well-being, as measured by the FACIT-Sp, IW, and GDS-SF, using a principal component analysis with varimax rotation, which combined the 15 items from the GDS-SF instrument with the 37 spirituality/religiosity items from FACIT-Sp and IW. Factors were selected based on the same criteria described earlier. All analyses were implemented with SAS software (Version 9.1; SAS Institute, Cary, NC).

Regarding missing data, only one participant had incomplete FACIT-Sp data, missing four items out of 12. Sixteen (27%) of the study subjects had incomplete data on the IW survey, missing an average of three out of 25 items per person. In all cases, missing data

was the result of nonresponse by the participants on individual survey items. The two items from the Ironson-Woods survey with the most missing data (8%) were the only two questions that specifically used the term “religious.” If fewer than half of the items comprising the subscales for the FACIT-Sp or IW were missing, we replaced the missing items with the average of the non-missing items in the corresponding subscales. Otherwise, the items and subscales were classified as missing. There were no missing data for the KCCQ surveys. Four (7%) of the 60 participants had incomplete GDS-SF data, missing an average of 1.3 out of 15 items per person. For the missing items, we used a weighted GDS score as described on the GDS Web site, which removes the missing items from the denominator to avoid underestimation of the scale score.²⁸

Results

Participants

The study sample is described in Table 1. The median age of the participants was 75 years; 37% were females and 12% were non-whites. Most of them had at least a high school education (58%). The median heart failure health status score (KCCQ) of 71 has been associated with New York Heart Association Class II.²⁹ Thirty-two percent had current clinically significant depression (GDS-SF > 4). Females were more likely to have higher depression scores (median GDS-SF for men = 2, for women = 4, $P = 0.04$).

The Functional Assessment of Chronic Illness Therapy—Spiritual Well-Being and Ironson-Woods Spirituality/Religiosity Index in Patients With Heart Failure

Cronbach’s coefficient alphas for the FACIT-Sp were 0.86 (full scale), 0.82 (Faith subscale), and 0.82 (Meaning/Peace subscale). The alpha coefficients for the IW were 0.98 (full scale), 0.97 (Sense of Peace subscale), 0.97 (Faith in God subscale), 0.90 (Religious Behavior subscale), and 0.95 (Compassionate View subscale). Table 2 displays the intra- and inter-instrument correlations between the subscales of FACIT-Sp and IW. Intra-instrument subscale correlations ranged from 0.53 to 0.89 (unshaded cells), whereas the interinstrument

Table 1
Study Population Characteristics (n = 60)

Characteristics	n (%) ^a
Female	22 (36.7)
Age, years, median (IQR)	75 (70, 81)
Race, African American	7 (11.7)
Married/significant other or partner (n = 59)	30 (50.9)
Highest grade completed in school (n = 59)	
Less than high school graduate	25 (42.4)
High school graduate	20 (33.9)
Additional education	14 (23.7)
Total household income (n = 56)	
<\$20,000	20 (35.7)
\$20,000–30,000	19 (33.9)
>\$30,000	17 (30.4)
Comorbid medical illness	
Chronic obstructive pulmonary disease	11 (18.3)
Cancer	8 (13.3)
Stroke	11 (18.3)
Prior myocardial infarction	28 (46.7)
MMSE score, median (IQR)	29 (28, 29)
Health status score (KCCQ), median (IQR)	71 (48, 90)
Quality-of-life subscale score (KCCQ), median (IQR)	75 (50, 88)
Depression score (GDS-SF), median (IQR)	2 (1, 5)
Probable depression (GDS-SF > 4)	19 (31.7)

IQR = interquartile range; MMSE = Mini-Mental State Examination; MSAS-SF = Memorial Symptom Assessment Scale—Short Form.

^aUnless otherwise indicated.

subscale correlations ranged widely from 0.03 to 0.84 (shaded cells). The Faith subscale of the FACIT-Sp was significantly correlated with each of the IW subscales (0.54–0.84; $P < 0.001$ for all), whereas the Meaning/Peace subscale of the FACIT-Sp was only modestly correlated with the Sense of Peace subscale (0.32, $P = 0.01$) and was not correlated with three of the four IW subscales.

Association of Functional Assessment of Chronic Illness Therapy—Spiritual Well-Being and Ironson-Woods Spirituality/Religiousness Index Subscales With Depression and Quality of Life

The Meaning/Peace subscale of the FACIT-Sp was strongly associated with both depression and quality of life, whereas the Faith subscale was associated with quality of life but not significantly associated with depression (Table 3). As sense of meaning/peace or faith increased, depression scores decreased, and quality-of-life scores increased. In contrast, none of the IW subscales was strongly

Table 2
Pearson Correlations (P-Value) Between IW and FACIT-Sp Subscale Scores

Spirituality Instrument Subscale	n	FACIT-Sp: Meaning/Peace	FACIT-Sp: Faith	IW: Sense of Peace	IW: Faith in God	IW: Religious Behavior	IW: Compassionate View
n	60	60	60	59	59	59	57
FACIT-Sp: Meaning/Peace	1.0			0.32 ^a	0.22 ^b	0.11 ^c	0.03 ^d
FACIT-Sp: Faith	0.53 ^e	1.0		0.84 ^e	0.77 ^e	0.69 ^e	0.54 ^e
IW: Sense of Peace				1.0			
IW: Faith in God				0.89 ^e	1.0		
IW: Religious Behavior				0.84 ^e	0.79 ^e	1.0	
IW: Compassionate View				0.74 ^e	0.63 ^e	0.81 ^e	1.0

Shaded areas contain between-scale correlations, and unshaded areas contain within-scale correlations.

^a $p = 0.01$.

^b $p = 0.09$.

^c $p = 0.43$.

^d $p = 0.80$.

^e $p < 0.0001$.

Table 3
Pearson Correlation (P-Value) Between the GDS-SF and KCCQ-QoL and Subscales of the IW and the FACIT-Sp Instruments

Spirituality Instrument Subscale	<i>n</i>	GDS-SF	KCCQ-QoL
FACIT-Sp: Meaning/Peace	60	-0.50 (<0.0001)	0.41 (0.001)
FACIT-Sp: Faith	60	-0.23 (0.07)	0.38 (0.003)
IW: Sense of Peace	59	-0.07 (0.59)	0.21 (0.10)
IW: Faith in God	59	-0.10 (0.46)	0.25 (0.05)
IW: Religious Behavior	59	-0.00 (0.98)	0.09 (0.52)
IW: Compassionate View	57	0.12 (0.36)	-0.05 (0.73)

GDS-SF = Geriatric Depression Scale-Short Form; KCCQ-QoL = Kansas City Cardiomyopathy Questionnaire-Quality of Life Subscale.

associated with either depression or quality of life except for a modest association between the Faith in God subscale and quality of life ($r = 0.25$, $P = 0.05$).

Domains of Spirituality/Religiosity Measured After Combining Scale Items

To further clarify the dimensions of spirituality/religiosity measured by the FACIT-Sp and IW scales, a principal component analysis with varimax rotation was performed on the 37 items that result when both scales are combined. Although six factors had eigenvalues greater than 1.0, which together accounted for 81% of the variance (53%, 12%, 6%, 5%, 3%, and 3%), a three-factor solution appeared reasonable after examination of the scree plot. We examined models for three to six factors. The models containing five or more factors had one or more factors consisting of one or two items. Hence, a three-factor model was deemed the best based on interpretability.

The factor loadings for the three-factor model are displayed in Table 4. Factor 1 encompassed both beliefs and practices related to God and religion and patients' assessments of the impacts of those beliefs on their lives. Several items reflected how one's spiritual/religious beliefs help one cope with illness in particular. Factor 1 contained all of the items from the IW "Sense of Peace" and "Faith in God" subscales, three of the five "Religious Behavior" subscale items, and the three FACIT-Sp items that include the terms "faith or spiritual beliefs" (all from the "Faith" subscale). Factor 2 described how one practices one's spiritual beliefs and how one's beliefs shape one's interactions and relationships with others. This factor included all of the items from the IW "Compassionate View" subscale and two items from the IW "Religious

Behavior" subscale. One item from the FACIT-Sp also loaded onto this factor, but the loading was weak (0.39), and this item also did not load well onto models containing a higher number of factors. Factor 3 captured feelings of inner peace and included seven of the eight FACIT-Sp "Meaning/Peace" subscale items.

Spirituality/Religiosity Compared With Psychological Well-Being

To evaluate the overlap between measures of spirituality/religiosity and psychological well-being, we conducted a principal component analysis with varimax rotation on combined items from the FACIT-Sp, IW, and GDS-SF. Ten factors had eigenvalues greater than 1.0, which together accounted for 81% of the variance (38%, 14%, 6%, 5%, 4%, 4%, 3%, 3%, 3%, and 2%). The scree plot suggested that between three and seven factors would be appropriate, and we reviewed these models. The model with four factors is displayed in Table 5.

This model is presented because the first three factors remained similar and stable throughout the models containing four to seven factors. Factors 5 and higher in these models contained one to three items and were difficult to interpret. Across these models, Factor 1 encompassed a broad range of spiritual and religious beliefs, values, and behaviors. It included all of the items from the IW as well as the three FACIT-Sp items that include the terms "faith or spiritual beliefs" (all from the "Faith" subscale). Factor 2 described feelings of inner peace and contentment and included most of the FACIT-Sp "Meaning/Peace" items as well as a few items from the GDS-SF. Factor 3 captured thoughts and feelings of depression, including fear, helplessness, worthlessness, emptiness,

Table 4
Factor Loadings for Combined Items From the Ironson-Woods Spirituality/Religiosity Index (IW) and the Functional Assessment of Chronic Illness Therapy - Spiritual Well-Being Scale (FACIT-Sp)

Items from the Ironson-Woods and FACIT-Sp scales	Factor 1	Factor 2	Factor 3
IW items			
My beliefs give me a sense of peace	0.72	0.55	—
My beliefs help me to know everything will be fine	0.81	—	—
My beliefs give meaning to my life	0.67	0.53	—
My beliefs help me to be relaxed	0.66	0.54	—
My beliefs help me to feel protected	0.73	—	—
My beliefs help me feel I am not alone	0.83	—	—
My beliefs help me feel I have a relationship or a connection with a higher form of being	0.72	0.46	—
My beliefs help me be less afraid of death	0.74	0.46	—
I believe my soul will live on in some form after my body dies	0.80	—	—
I believe God created all things in the universe	0.90	—	—
God will not turn his back on me no matter what I do	0.88	—	—
When I am ill, God gives me courage to cope with my illness	0.86	—	—
When I am ill, God will answer my prayers for a recovery	0.89	—	—
My beliefs are very influential in my recovery when I am ill	0.90	—	—
When I am ill my faith gives me optimism that I will recover	0.93	—	—
I attend religious services	0.61	0.51	—
I participate in religious rituals	0.48	0.70	—
I pray or meditate to get in touch with God	0.73	—	—
I discuss my beliefs with others who share my beliefs	0.62	0.55	—
My beliefs give me a set of rules I must obey	0.57	0.62	—
My beliefs teach me to help other people who are in need	0.55	0.67	—
My beliefs help me feel compassion/love/respect for others	0.49	0.61	—
I have a responsibility to help others	0.42	0.79	—
My beliefs increase my acceptance and tolerance of others	—	0.84	—
I feel I am connected to all humanity	—	0.89	—
FACIT-Sp items			
I feel peaceful	—	—	0.69
I have a reason for living	—	—	0.70
My life has been productive	—	—	0.61
I have trouble feeling peace of mind	—	0.39	—
I feel a sense of purpose in my life	—	—	0.78
I am able to reach down deep into myself for comfort	—	—	0.72
I feel a sense of harmony within myself	—	—	0.80
My life lacks meaning or purpose	—	—	-0.62
I find comfort in my faith or spiritual beliefs	0.65	—	0.41
I find strength in my faith or spiritual beliefs	0.53	0.42	—
My illness has strengthened my faith or spiritual beliefs	0.66	—	—
I know whatever happens with my illness, things will be okay	0.50	—	0.63
Percent of total variance	38.0	19.0	13.6
Coefficient alpha	0.98	0.89	0.86

Primary factor loadings are presented in boldface, and any additional loadings above 0.40 are displayed.

hopelessness, and fatigue. Throughout models with four to seven factors, Factor 3 included nine or 10 of the 15 GDS-SF items. Factors 5 and higher in these models were difficult to interpret because they contained one to three items that were weakly loaded and the factors had low alpha coefficients.

Discussion

This comparison of the FACIT-Sp and IW instruments in a sample of outpatients with heart failure informs the ongoing effort to measure spirituality and to make sense of associations

between spirituality measures, mental health, and quality-of-life outcomes. The major findings are as follows: 1) the scales had adequate internal consistency in patients with heart failure; 2) subscales of the FACIT-Sp were generally associated with depression and heart failure-related quality of life, whereas the IW subscales generally were not; 3) combining items from the two measures showed that a mix of items from each measure formed one factor that explained the largest amount of variance; and 4) several items measuring psychological well-being overlapped with spiritual well-being, but most of them were

Table 5
**Factor Loadings for Combined Items From the Ironson-Woods Spirituality/Religiousness Index,
 the Functional Assessment of Chronic Illness Therapy—Spiritual Well-Being Scale, and the Geriatric
 Depression Scale**

	Factor 1	Factor 2	Factor 3	Factor 4
IW items				
My beliefs give me a sense of peace	0.91	—	—	—
My beliefs help me to know everything will be fine	0.89	—	—	—
My beliefs give meaning to my life	0.87	—	—	—
My beliefs help me to be relaxed	0.86	—	—	—
My beliefs help me to feel protected	0.82	—	—	—
My beliefs help me feel I am not alone	0.86	—	—	—
My beliefs help me feel I have a relationship or a connection with a higher form of being	0.86	—	—	—
My beliefs help me be less afraid of death	0.87	—	—	—
I believe my soul will live on in some form after my body dies	0.82	—	—	—
I believe God created all things in the universe	0.77	—	—	0.45
God will not turn his back on me no matter what I do	0.83	—	—	—
When I am ill, God gives me courage to cope with my illness	0.94	—	—	—
When I am ill, God will answer my prayers for a recovery	0.89	—	—	—
My beliefs are very influential in my recovery when I am ill	0.92	—	—	—
When I am ill my faith gives me optimism that I will recover	0.91	—	—	—
I attend religious services	0.78	—	—	—
I participate in religious rituals	0.76	—	—	—
I pray or meditate to get in touch with God	0.79	—	—	—
I discuss my beliefs with others who share my beliefs	0.83	—	—	—
My beliefs give me a set of rules I must obey	0.80	—	—	—
My beliefs teach me to help other people who are in need	0.81	—	—	—
My beliefs help me feel compassion/love/respect for others	0.74	—	—	—
I have a responsibility to help others	0.76	—	—	-0.47
My beliefs increase my acceptance and tolerance of others	0.73	—	—	-0.47
I feel I am connected to all humanity	0.69	—	—	-0.52
FACIT-Sp items				
I feel peaceful	—	0.60	—	—
I have a reason for living	—	0.69	—	—
My life has been productive	—	0.60	—	—
I have trouble feeling peace of mind	—	—	—	-0.35
I feel a sense of purpose in my life	—	0.78	—	—
I am able to reach down deep into myself for comfort	—	0.58	—	—
I feel a sense of harmony within myself	—	0.72	—	—
My life lacks meaning or purpose	—	-0.69	—	—
I find comfort in my faith or spiritual beliefs	0.64	0.42	—	—
I find strength in my faith or spiritual beliefs	0.73	—	—	—
My illness has strengthened my faith or spiritual beliefs	0.67	—	—	—
I know whatever happens with my illness, things will be okay	0.47	0.58	—	—
GDS-SF				
Are you basically satisfied with your life?	—	0.43	—	—
Have you dropped many of your activities and interests?	—	-0.43	—	—
Do you feel happy most of the time?	—	0.71	—	—
Do you prefer to stay at home rather than going out and doing new things?	—	—	—	0.31
Do you feel that life is empty?	—	—	0.53	—
Do you often get bored?	—	-0.46	0.56	—
Are you in good spirits most of the time?	—	—	-0.45	—
Are you afraid that something bad is going to happen to you?	—	—	0.75	—
Do you feel helpless?	—	—	0.64	—
Do you feel that you have more problems with memory than most?	—	—	0.54	—
Do you think it is wonderful to be alive?	—	—	—	0.67
Do you feel pretty worthless the way you are now?	—	—	0.57	—
Do you feel full of energy?	—	—	-0.48	—
Do you feel that your situation is hopeless?	—	—	0.63	—
Do you think that most people are better off than you are?	—	—	0.44	—
Percent of total variance	37.3	11.9	7.5	6.3
Coefficient alpha	0.98	0.87	0.82	0.24

Primary factor loadings are presented in boldface, and any additional loadings above 0.40 are displayed.

conceptually and statistically distinct from spiritual well-being.

The FACIT-Sp and the IW generally measured different constructs, although the FACIT-Sp Faith subscale overlapped with items from the IW. The IW measured self-reported beliefs and behaviors in explicitly spiritual and religious language, whereas the FACIT-Sp largely measured a sense of inner peace and purpose. The overlap in the instruments only included items from the FACIT-Sp Faith subscale. Indeed, the strongest correlation between the subscales from the two instruments was between the FACIT-Sp Faith subscale and the IW Sense of Peace subscale. The items from the FACIT-Sp Faith subscale that included the words “faith or spiritual beliefs” loaded onto the construct measured by the IW in the principal component analysis. The association of the FACIT-Sp subscales with depression and quality of life supported the notion that the FACIT-Sp, particularly the Meaning/Peace subscale, measured a different construct from the IW.

Our research demonstrated that instruments that claim to be measuring the same spiritual domain or construct may actually be measuring different concepts altogether. We found that the subscales from two spirituality instruments that purported to measure sense of peace were weakly correlated, and the items from these subscales formed different factors in a principal component analysis. Although there are more than 100 spirituality/religiosity measures available, little research has compared the available instruments in the same population. However, articles have provided guidance by classifying these instruments according to their measurement domains.^{3,30,31} For example, Sulmasy³ described four measurement domains: religiosity, spiritual/religious coping and support, spiritual well-being, and spiritual needs. He emphasized the need to better understand relationships between these domains and how they, in turn, relate to other variables. Thus, analyses such as this one are a necessary step to gain a better understanding of construct validity, and by extension, to gain a better understanding of the relationship between spiritual and psychological factors and the implications for clinical practice.

The FACIT-Sp Meaning/Peace subscale was associated with depression and several

depression items loaded onto the same factor with the FACIT-Sp Meaning/Peace subscale. However, most of the depression items formed a separate factor when combined with the FACIT-Sp and IW items. This finding reveals that there can be some measurement overlap between depression, as an indicator of psychological well-being, and spiritual well-being, although there is also substantial distinctness of psychological and spiritual well-being. Although this conclusion should be tentative and deserves replication, given the small sample size, several implications arise. First, it advocates for asking about spiritual well-being in addition to psychological well-being in patients with chronic heart failure who are in the chronic care setting. Although some clinicians may already recognize the importance of doing this, our research provides evidence that the spiritual domain is indeed separate from the psychological domain and is associated with quality of life. Second, one cannot assume that depressed patients have low spiritual well-being or that nondepressed patients have high spiritual well-being. Asking specifically about spiritual well-being in addition to psychological well-being could allow clinicians in the chronic care setting to help patients foster an important coping resource, discover a contributor to psychological well-being, or identify an area of need separate from psychological well-being but critically related to quality of life. For example, a patient with heart failure who describes a sense of meaninglessness and hopelessness without loss of interest in activities or depressed mood may be suffering from a spiritual crisis. Identifying this with the patient could assist in more appropriately focused therapy and/or referral of the most appropriate resource, such as chaplain, pastor, community group, or counselor.

This study supports an effort to create assessment tools that would help clinicians with a spiritual “differential diagnosis.” Combining the items from the FACIT-Sp and IW generated several factors or domains that may help clinicians better understand the spiritual or religious needs of patients. When patients describe distress related to their spiritual or religious beliefs (Table 4; Factor 1), clinicians might consider referral to a spiritual authority most relevant to the patient, such as a priest, minister, rabbi, or counselor. Distress relating to the relational aspects of

spirituality might prompt facilitated involvement of the patient's family or spiritual community (Table 4; Factor 2). Distress relating to feelings or lack of inner peace (Table 4; Factor 3) may be helped by providers comfortable in addressing patient needs that overlap between psychological and spiritual needs, including the doctors or other providers caring for the patient, a chaplain, or a mental health professional. Although some clinicians may recognize these domains and their implications from good clinical judgment, our study supports the possibility that different dimensions of spirituality can be measured and can be clinically relevant in outpatients with chronic heart failure. Further work on developing valid and reliable instruments that guide clinicians in this type of spiritual "differential diagnosis" would be very helpful.

The results reveal the complexity in conceptualizing and measuring spirituality and support the effort to create conceptual models that inform measurement of this complex construct.^{3,18} Lessons can be drawn from attempts to understand and measure another complex construct: psychological well-being. We measured depression in this study as an indicator of psychological well-being because it is well researched in basic science, health services, and outcomes research.³² However, patients with heart failure and other chronic or advanced illnesses may develop demoralization, grief, and anxiety, among other experiences. Prior conceptual and empirical research has distinguished some of these clinically important states.³³⁻³⁶ In our study, each spirituality instrument captured only a part of the range of patients' spiritual issues. To answer the question "What are the most important or 'core' domains of spirituality?" subsequent steps necessarily involve studies like this one to develop and test measures to identify "core" spiritual domains. This work should inform cohesive, testable, and clinically relevant conceptual models of spirituality.

This study has several limitations. The small sample size limited our ability to examine instrument performance in subgroups of patients with different demographic or clinical characteristics. The participants were from a single geographic area, and thus, the results may not be generalizable. Longitudinal data would have been helpful to understand how

the measures change and interrelate over time. Given the small sample size, the principal component analyses should be considered exploratory. Principal component analysis involves some subjective interpretation, and thus, replication of these findings would strengthen their validity. The use of this method to understand domains of spirituality or the relationship between psychological and spiritual well-being is but one way of investigating complex issues that require multiple methods and further in-depth study. Finally, we only examined two spirituality measures. Although the FACIT-Sp and IW are widely used, there are numerous other measures available that may assess different domains of spirituality not identified by the measures we examined. The overlap found in our study between spiritual and psychological well-being could have been related to measurement error or sample bias because of the small sample size. This overlap also could have been caused by another unmeasured construct related to both spiritual and psychological well-being. For example, a measure of a sense of inner calm may explain the overlap and clarify the distinctness of feelings of peace and depression. Further research is needed to better understand whether there is measurement overlap between spiritual and psychological instruments and to describe the nature of the overlap.

In conclusion, in patients with chronic heart failure, the FACIT-Sp measured aspects of spirituality related to feelings of peace and coping and was correlated with depression and quality of life. The IW measured aspects of spirituality related to beliefs, coping, and relationship, and was generally not correlated with depression or quality of life. The results suggested that psychological and spiritual well-being, despite some overlap, remain distinct phenomena.

References

1. Zinnbauer BJ, Pargament KI, Scott AB. The emerging meanings of religiousness and spirituality: problems and prospects. *J Pers* 1999;67(6):889-919.
2. Muldoon M, King N. Spirituality, health care, and bioethics. *J Relig Health* 1995;34(4):329-349.
3. Sulmasy DP. A biopsychosocial-spiritual model for the care of patients at the end of life. *Gerontologist* 2002;42(Spec No 3):24-33.

4. Yi MS, Mrus JM, Wade TJ, et al. Religion, spirituality, and depressive symptoms in patients with HIV/AIDS. *J Gen Intern Med* 2006;21(Suppl 5):S21–S27.
5. Yoon DP, Lee EK. The impact of religiousness, spirituality, and social support on psychological well-being among older adults in rural areas. *J Gerontol Soc Work* 2007;48(3–4):281–298.
6. Bekelman DB, Dy SM, Becker DM, et al. Spiritual well-being and depression in patients with heart failure. *J Gen Intern Med* 2007;22(4):470–477.
7. Dunn LL, Shelton MM. Spiritual well-being, anxiety, and depression in antepartal women on bedrest. *Issues Ment Health Nurs* 2007;28(11):1235–1246.
8. Cohen SR, Mount BM, Bruera E, et al. Validity of the McGill Quality of Life Questionnaire in the palliative care setting: a multi-centre Canadian study demonstrating the importance of the existential domain. *Palliat Med* 1997;11(1):3–20.
9. Daaleman TP, Perera S, Studenski SA. Religion, spirituality, and health status in geriatric outpatients. *Ann Fam Med* 2004;2(1):49–53.
10. Hummer RA, Rogers RG, Nam CB, Ellison CG. Religious involvement and U.S. adult mortality. *Demography* 1999;36(2):273–285.
11. Strawbridge WJ, Cohen RD, Shema SJ, Kaplan GA. Frequent attendance at religious services and mortality over 28 years. *Am J Public Health* 1997;87(6):957–961.
12. Oman D, Reed D. Religion and mortality among the community-dwelling elderly. *Am J Public Health* 1998;88(10):1469–1475.
13. Koenig HG, Hays JC, Larson DB, et al. Does religious attendance prolong survival? A six-year follow-up study of 3,968 older adults. *J Gerontol A Biol Sci Med Sci* 1999;54(7):M370–M376.
14. Gillum RF, King DE, Obisesan TO, Koenig HG. Frequency of attendance at religious services and mortality in a U.S. national cohort. *Ann Epidemiol* 2008;18(2):124–129.
15. Miller LW, Missov ED. Epidemiology of heart failure. *Cardiol Clin* 2001;19(4):547–555.
16. Westlake C, Dracup K. Role of spirituality in adjustment of patients with advanced heart failure. *Prog Cardiovasc Nurs* 2001;16(3):119–125.
17. Beery TA, Baas LS, Fowler C, Allen G. Spirituality in persons with heart failure. *J Holist Nurs* 2002;20(1):5–25.
18. Koenig HG. Concerns about measuring “spirituality” in research. *J Nerv Ment Dis* 2008;196(5):349–355.
19. Nelson CJ, Rosenfeld B, Breitbart W, Galietta M. Spirituality, religion, and depression in the terminally ill. *Psychosomatics* 2002;43(3):213–220.
20. McClain CS, Rosenfeld B, Breitbart W. Effect of spiritual well-being on end-of-life despair in terminally-ill cancer patients. *Lancet* 2003;361(9369):1603–1607.
21. Peterman AH, Fitchett G, Brady MJ, Hernandez L, Cella D. Measuring spiritual well-being in people with cancer: the Functional Assessment of Chronic Illness Therapy-Spiritual Well-being Scale (FACIT-Sp). *Ann Behav Med* 2002;24(1):49–58.
22. Ironson G, Solomon GF, Balbin EG, et al. The Ironson-Woods Spirituality/Religiousness Index is associated with long survival, health behaviors, less distress, and low cortisol in people with HIV/AIDS. *Ann Behav Med* 2002;24(1):34–48.
23. Yesavage JA. Geriatric Depression Scale. *Psychopharmacol Bull* 1988;24(4):709–711.
24. Sheikh JI, Yesavage JA. Geriatric Depression Scale (GDS): recent evidence and development of a shorter version. In: Brink TL, ed. *Clinical gerontology: A guide to assessment and intervention*. New York, NY: The Haworth Press, 1986: 165–173.
25. Whooley MA, Browner WS. Association between depressive symptoms and mortality in older women. Study of Osteoporotic Fractures Research Group. *Arch Intern Med* 1998;158(19):2129–2135.
26. Arthur A, Jagger C, Lindesay J, Graham C, Clarke M. Using an annual over-75 health check to screen for depression: validation of the short Geriatric Depression Scale (GDS15) within general practice. *Int J Geriatr Psychiatry* 1999;14(6):431–439.
27. Green CP, Porter CB, Bresnahan DR, Spertus JA. Development and evaluation of the Kansas City Cardiomyopathy Questionnaire: a new health status measure for heart failure. *J Am Coll Cardiol* 2000;35(5):1245–1255.
28. Geriatric Depression Scale. Available from <http://www.stanford.edu/~yesavage/GDS.html> 2008; Accessed September 8, 2008.
29. Heidenreich PA, Spertus JA, Jones PG, et al. Health status identifies heart failure outpatients at risk for hospitalization or death. *J Am Coll Cardiol* 2006;47(4):752–756.
30. Hill PC, Pargament KI. Advances in the conceptualization and measurement of religion and spirituality. Implications for physical and mental health research. *Am Psychol* 2003;58(1):64–74.
31. Egbert N, Mickley J, Coeling H. A review and application of social scientific measures of religiosity and spirituality: assessing a missing component in health communication research. *Health Commun* 2004;16(1):7–27.
32. Katon WJ. Clinical and health services relationships between major depression, depressive symptoms, and general medical illness. *Biol Psychiatry* 2003;54(3):216–226.

33. Prigerson HG, Frank E, Kasl SV, et al. Complicated grief and bereavement-related depression as distinct disorders: preliminary empirical validation in elderly bereaved spouses. *Am J Psychiatry* 1995; 152(1):22–30.
34. Prigerson HG, Shear MK, Newsom JT, et al. Anxiety among widowed elders: is it distinct from depression and grief? *Anxiety* 1996;2(1):1–12.

35. Boelen PA, van den BJ. Complicated grief, depression, and anxiety as distinct postloss syndromes: a confirmatory factor analysis study. *Am J Psychiatry* 2005;162(11):2175–2177.
36. Lichtenthal WG, Cruess DG, Prigerson HG. A case for establishing complicated grief as a distinct mental disorder in DSM-V. *Clin Psychol Rev* 2004; 24(6):637–662.