Which Domains of Spirituality are Associated with Anxiety and Depression in Patients with Advanced Illness?

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BACKGROUND: Anxiety and depression are common in seriously ill patients and may be associated with spiritual concerns. Little research has examined how concerns in different domains of spirituality are related to anxiety and depression.

OBJECTIVE: To examine the association of spiritual history and current spiritual well-being with symptoms of anxiety and depression in patients with advanced illness.

DESIGN: Cross-sectional cohort study

PARTICIPANTS: Two hundred and ten patients with advanced illness, of whom 1/3 were diagnosed with cancer, 1/3 COPD, and 1/3 CHF. The mean age of the sample was 66 years, and 91% were Christian.

MEASUREMENTS: Outcome measures were the Profile of Mood States' Anxiety Subscale (POMS) and 10-item Center for Epidemiologic Studies Depression Scale (CESD). Predictors were three subscales of the Spiritual History Scale measuring past religious help-seeking and support, past religious participation, and past negative religious experiences and two subscales of the Functional Assessment of Chronic Illness Therapy Spiritual Well-Being Scale measuring the role of faith in illness and meaning, peace, and purpose in life. We conducted multiple regression analyses, controlling for demographics, disease type and severity, self-rated religiousness/spirituality, and frequency of religious attendance and devotion.

RESULTS: In adjusted analyses, greater spiritual well-being, including both beliefs about the role of faith in illness and meaning, peace, and purpose in life were associated with fewer symptoms of anxiety (P≤0.001) and depression (P<0.001). Greater past negative religious experiences were associated with more symptoms of anxiety (P=0.04) and depression (P=0.004). No other measures of spiritual history were associated with the outcomes.

CONCLUSIONS: In this diverse sample of seriously ill patients, current spiritual well-being and past negative religious experiences were associated with symptoms of anxiety and depression. Healthcare providers should consider asking about current spiritual well-being and past negative religious experiences in their assessment of seriously ill patients with symptoms of anxiety and depression.

KEY WORDS: spirituality; anxiety; depression; end-of-life care; terminal illness.

INTRODUCTION

Depression and anxiety are common in patients with advanced illness and are associated with decreased functional status, decreased quality of life, and greater difficulty managing physical symptoms[1,2]. The causes of psychological distress are many, including uncontrolled symptoms, effects of the disease itself, treatment, and loss of independence[3]. Other important, but often overlooked risk factors for psychological distress are existential or spiritual concerns. For example, negative religious coping and lower spiritual well-being are associated with higher rates of anxiety and depression[4–9]. As such, in evaluating seriously ill patients with anxiety or depression, healthcare providers should consider not only contributing physical and psychosocial factors but also the influence of spiritual concerns.

Spiritual beliefs are often central to patients with serious illness and serve as a resource for coping with illness and making treatment decisions[4,5,10–12]. Because of the salience of spirituality to the illness experience, experts and national guidelines recommend that healthcare providers ask patients about their spiritual beliefs[13–16]. Further, many patients want physicians to ask about their spiritual beliefs, especially if they are gravely ill[17,18]. Yet, only between 10% and 30% of physicians routinely do so because of lack of time, expertise, comfort discussing spiritual issues, or concerns about what to do with the information and how it relates to patient outcomes[19–22]. Another challenge to integrating spirituality into clinical practice is that spirituality, as described in the

literature and queried by most clinical spiritual assessment tools, is a broad concept, encompassing multiple domains, including spiritual coping, spiritual well-being, spiritual history, faith and beliefs, and religious participation[23]. The specific relationships between these domains and health outcomes, such as anxiety and depression, are less well known and varies over the course of illness.

Many studies of the relationship between spirituality and anxiety and depression have focused on current participation in religious services or other activities[24]. While important, these studies only focus on one domain of spirituality and may not be applicable to the experience of seriously-ill patients because religious participation is confounded with end-of-life functional declines[25]. Other studies have examined the association of religious coping and spiritual well-being with anxiety and depression[4–9]. Many of these studies include patients with a single disease type, and therefore, do not allow for comparisons between patients with different diagnoses and can not determine if disease type is a confounder of the relationship between spirituality and health outcomes.

The purpose of this study was to examine, in patients with serious illness, the relationship between anxiety and depression, and two domains of spirituality—past spiritual experiences (i.e. spiritual history) and current spiritual wellbeing. Studies suggest these domains may be important to the experience of some seriously-ill patients. Specifically, prior work has described the importance of faith, meaning, and peace (current spiritual well-being) to patients at end-of-life[26]; religious practices over the life course (spiritual history) have been associated with current social support, self-rated health, and depression[27]. By focusing on specific domains of spirituality, this work refines our understanding of the relationship between spirituality and health outcomes in a diverse sample of patients with serious illness and may assist healthcare providers in a targeted assessment of spiritual concerns in those experiencing emotional distress.

METHODS

Design

This study is a cross-sectional analysis using baseline assessments of patients enrolled in Pathways, a prospective cohort study of 210 patients living with advanced illness. Patients were followed monthly for up to 4 years or until death. Baseline data were collected in the initial interview after patients consented to participate in the study. The study was designed to document changes in physical, social, emotional, and spiritual well-being at the end of life. The study was approved by the Institutional Review Boards of the Durham Veterans Affairs and Duke University Medical Centers.

Subjects

The goal of Pathways was to study trajectories at the end of life among patients with on average one-year survival, but who may be followed for up to two years. We defined end of life broadly to include individuals with 50% one-year mortality. To identify patients, we chose clinical criteria associated with an estimated 50% one-year survival for patients with Stage IV cancer (also stage IIIb lung cancer), NYHA Stage III or IV Congestive Heart Failure (LVEF<40%), and COPD with hypercapnea (pC02>46). These three categories are the most common causes of death from chronic disease in Durham County, North Carolina that do not primarily impair cognitive function and disrupt patients' ability to report on their experiences. Additionally, because we expected disease type to influence trajectory patterns, we enrolled those with cancer and noncancer diagnoses and chose to limit the number of illnesses to three categories of advanced disease which could capture variation in illness course and functional decline. We aimed to recruit 70 patients from each of the three groups, for a total of 210 patients. To recruit a representative sample, we identified eligible patients with the target conditions who lived within a 35-mile radius of Durham, North Carolina using databases at Duke Hospital and the Durham VA Medical Center. The 35-mile radius allowed for regular home interviews. Additional detail regarding this sample has been reported previously[28].

Predictor Variables

The predictor variables for these analyses were measures of spiritual history and current spiritual well-being. The specific scales are described below.

Spiritual History. The Spiritual History Scale (SHS), a 23-item four-dimensional measure of religious and spiritual practices over the life course[27], was developed in a sample of community-dwelling elders living in a predominantly Protestant Christian region of the United States. Although the measure's development and validation sample was primarily Protestant, it also enrolled those whose religious affiliations were Jewish, Catholic, or other. This analysis included three subscales of the SHS—God Helped (ten items), Lifetime Religious Social Support (four items), and Cost of Religiousness (three items). God Helped is an index of past help-seeking (e.g., prayed, trusted, looked for) and instrumental support received (e.g., blessing, guidance) from the divine or from religious practices. Lifetime Religious Social Support is an index of adult religious participation and involvement in midlife. Cost of Religiousness measures the presence of physical, emotional, and interpersonal losses and difficulties associated with one's past religious life. Higher scores on these subscales indicate a history of greater use of religious practices for guidance and support (God Helped), greater participation in a religious community (Life-time Religious Social Support), and more negative experiences associated with religious life (Cost of Religiousness). Cronbach's alpha for the subscales ranges from 0.70 to 0.95.

Current Spiritual Well-being. To assess current spiritual well-being, we used the two subscales of the Functional Assessment of Chronic Illness Therapy Spiritual Well-Being Scale (FACIT-Sp). These subscales are brief and have been validated in patients with advanced illness[29–31]. The FACIT

Faith subscale (four items) assesses the role of faith in illness. The FACIT Meaning/Peace Subscale (eight items) assesses meaning, peace, and purpose in life.

Outcome Variables

To measure symptoms of anxiety and depression, we used the brief Profile of Mood States' anxiety sub-scale (POMS) and the ten-item Center for Epidemiologic Studies Depression scale (CESD). These scales are widely used and have been shown to be of low burden to patients[32,33].

Covariates

We chose covariates for the multivariable models based on their relevance as potential confounders of the relationships between the predictors (subscales of the SHS and FACIT-Sp) and outcomes (POMS, CESD). The covariates were demographics, religious variables, diagnosis and disease severity. The demographics included age at baseline, race, gender, marital status, and education. The religious variables were measures of the frequency of attendance at religious services, frequency of religious devotion, and self-rated spirituality or religiousness. In addition to diagnosis (COPD, CHF, cancer), we calculated a measure of disease severity. We created a variable as the cross-product of number of bed-days and self-rated health (poor, fair, good, or excellent). The bed days question asked, "During the past three months, about how many days did you spend most of your time in bed or on a chair/couch?" Possible responses included 'none', 'just a few days', 'half the time', 'more than half,' and 'all the time.' Based on distributions, we collapsed these five categories to high and low bed days, with high constituting at least half of the time in bed. The final variable of disease severity included the following categories: poor or fair health and high bed days, poor or fair health and low bed days, good or excellent health and high beds days, good or excellent health and low bed days.

Analyses

We calculated proportions for categorical variables and means and standard deviations for continuous variables. We used t-tests and ANOVA to compare mean scores on subscales of the SHS and FACIT-Sp by demographics, diagnosis, disease severity, and religious variables. We used multiple linear regression models to determine the association between each of the subscales of the SHS and the FACIT-Sp and both the POMS and ten-item CESD. We ran separate models for each predictor. The final model included the predictor of interest, demographics, diagnosis, disease severity, and religious variables. All variables were entered into each model, and no variables were removed from the final models. We also ran each model with the subgroup of 140 patients with noncancer diagnoses to determine whether results differed significantly from those obtained with the complete sample. We used R-squared as a measure of the proportion of variability in the outcomes explained by each of the models. A *P* value of <0.05

was considered statistically significant. All analyses were conducted using SAS v 9.1 (Cary, NC).

RESULTS

Table 1 lists baseline characteristics of the sample. The mean age was 66 years. Over half of participants identified themselves as White (60.95%), and the vast majority were Christian (91%). As per the study design, the patients were equally distributed among the three disease categories (cancer, CHF, COPD) with 1/3 of the sample in each group. Patients with COPD were slightly older (mean age 68.3) than those with cancer (mean age 64.5) or CHF (mean age 65.4) and more likely to be male (73% for COPD vs. 51% for both cancer and CHF). Patients with cancer were more likely to fall into the least severe disease category—good or excellent health/low bed days (40% vs. 21.4% for COPD and 20% for CHF).

There were significant differences in mean scores by demographic and religious variables on the subscales of the SHS and the FACIT-Sp (Table 2). Compared to their counterparts, nonwhites, women, those with less education, those with a noncancer diagnosis, more frequent religious attendance and devotion, and greater self-rated spirituality scored higher on the God Helped and Lifetime Religious Social Support Sub-

Table 1. Description of Sample (N=210)

Variables	N (%)
Mean age in years (SD)	66.6 (12.32)
Gender	
Female	87 (41.43)
Race	
White	128 (60.95)
Non-white	82 (39.05)
Marital Status	
Married	104 (49.52)
Other	106 (50.48)
Education	
< High School	43 (20.48)
≥ High School	167 (79.52)
Disease Category	
Cancer	70 (33.33)
COPD	70 (33.33)
CHF	70 (33.33)
Disease Severity	
Poor or fair health and high bed days	65 (30.95)
Poor or fair health and low bed days	58 (27.62)
Good or excellent health and high bed days	30 (14.29)
Good or excellent health and low bed days	57 (27.14)
Religious Group	
Christian	191 (90.95)
Other (Jewish, Muslim, Other, None)	19 (9.05)
Attendance at Religious Services	
Never, rarely, N/A	103 (49.05)
Once, twice, or a few times a month	33 (15.71)
At least once a week	74 (35.24)
Regular Devotion	
Never, rarely, less than weekly	47 (22.38)
At least once a week	33 (15.71)
Daily	130 (61.90)
Self-Rated religiousness/spirituality	
Not at all or only slightly	22 (10.48)
Fairly	90 (42.86)
Very	98 (46.67)

Table 2. Comparison of Mean Scores on Subscales of Spiritual History Scale and FACIT-sp by Demographic and Religious Variables

	God Helped	Life-Time Religious Social Support	Cost of Religiousness	FACIT Faith	FACIT Meaning and Peace
Variables	Mean (Standard Deviation)				
Age	P=0.11	P=0.14	P=0.15	P=0.41	P=0.35
< 65	44.89 (6.78)	12.74 (4.56)	5.00 (2.74)	3.01 (0.97)	1.90 (0.57)
≥ 65	43.18 (8.02)	13.73 (4.90)	5.56 (2.83)	2.89 (1.05)	1.96 (0.47)
Gender	P=0.003	P<0.001	P=0.09	P<0.001	P=0.02
Female	45.63 (5.98)	14.63 (4.63)	4.93 (2.46)	3.26 (0.87)	2.03 (0.47)
Male	42.69 (8.29)	12.37 (4.66)	5.60 (2.99)	2.72 (1.05)	1.87 (0.54)
Race	P<0.001	P=0.002	P=0.24	P=0.004	P=0.52
White	42.02 (8.78)	12.49 (4.92)	5.13 (2.55)	2.78 (1.07)	1.92 (0.51)
Non-white	46.85 (3.44)	14.58 (4.26)	5.62 (3.13)	3.19 (0.88)	1.96 (0.53)
Marital Status	P=0.02	P=0.07	P=0.97	P=0.75	P=0.32
Married	42.65 (8.87)	12.70 (5.12)	5.32 (2.76)	2.92 (1.09)	1.97 (0.50)
Other	45.13 (5.76)	13.91 (4.34)	5.33 (2.85)	2.96 (0.94)	1.90 (0.53)
Education	P<0.001	P=0.003	P=0.16	P=0.31	P=0.50
< High school	46.79 (5.12)	15.21 (4.25)	5.86 (3.16)	3.08 (0.84)	1.89 (0.54)
≥ High school	43.16 (7.90)	12.82 (4.79)	5.19 (2.69)	2.90 (1.05)	1.95 (0.51)
Disease Category	P=0.01	P=0.03	P=0.24	P=0.38	P=0.02
Cancer	41.73 (9.88)	12.06 (4.83)	5.29 (2.55)	2.90 (1.12)	2.05 (0.45)
CHF	45.09 (6.32)	14.01 (4.63)	5.74 (3.10)	2.85 (1.07)	1.81 (0.58)
COPD	44.90 ((5.28)	13.86 (4.67)	4.94 (2.69)	3.08 (0.82)	1.94 (0.48)
Disease Severity	P=0.40	P=0.68	P=0.87	P=0.15	P<0.001
Poor or fair health and high bed days	44.78 (6.73)	13.58 (4.95)	5.40 (3.11)	2.89 (1.04)	1.74 (0.56)
Poor or fair health and low bed days	42.67 (8.22)	12.67 (4.52)	5.07 (2.71)	2.85 (1.02)	1.87 (0.51)
Good or excellent health and high bed days	43.30 (6.33)	13.73 (4.59)	5.37 (2.28)	2.74 (0.98)	1.95 (0.45)
Good or excellent health and low bed days	44.47 (8.26)	13.42 (4.97)	5.47 (2.80)	3.19 (0.96)	2.22 (0.38)
Religious Affiliation	P=0.02	P<0.001	P=0.85	P=0.03	P=0.97
Christian	44.68 (6.13)	13.68 (4.53)	5.34 (2.85)	3.01 (0.96)	1.93 (0.51)
Other	36.16 (14.00)	9.58 (5.65)	5.21 (2.30)	2.29 (1.32)	1.94 (0.61)
Attendance at Religious Services	P=0.005	P<0.001	P<0.001	P<0.001	P=0.03
Never, rarely, N/A	42.45 (8.53)	11.93 (5.04)	4.58 (2.06)	2.63 (1.05)	1.85 (0.59)
Once, twice, few times a month	43.39 (6.75)	13.48 (4.06)	5.45 (3.59)	2.92 (0.96)	1.93 (0.37)
At least once a week	46.16 (5.77)	15.15 (4.05)	6.30 (3.02)	3.39 (0.82)	2.06 (0.44)
Regular Devotion	P<0.001	P<0.001	P=0.54	P<0.001	P=0.13
Never, rarely, < weekly	39.38 (9.23)	11.51 (4.70)	4.98 (2.59)	2.05 (1.00)	1.82 (0.53)
At least once a Week	43.21 (7.79)	12.06 (4.37)	5.67 (3.36)	2.89 (0.90)	1.88 (0.49)
Daily	45.72 (6.00)	14.28 (4.66)	5.36 (2.72)	3.28 (0.84)	1.99 (0.51)
Self-rated religiousness/spirituality	P<0.001	P<0.001	P=0.003	P<0.001	P=0.08
Not at all or slightly	33.09 (12.47)	10.41 (5.53)	5.68 (3.14)	1.97 (1.22)	1.78 (0.53)
Fairly	42.98 (6.60)	11.59 (3.96)	4.58 (2.33)	2.69 (0.98)	1.89 (0.53)
Very	47.18 (3.31)	15.54 (4.29)	5.93 (2.97)	3.39 (0.73)	2.01 (0.49)

scales. Also, mean scores on the Cost of Religiousness Subscale differed significantly by frequency of attendance at religious services and self-rated spirituality.

On measures of current spiritual well-being, nonwhites, women, those with more frequent religious attendance and devotion, and greater self-rated spirituality scored higher on the FACIT Faith Subscale. More frequent religious attendance, a diagnosis of cancer, and low disease severity were associated with higher scores on the FACIT Meaning and Peace Subscale.

The mean POMS and CESD scores for the sample were 5.31 (SD 4.68, range 0 – 20) and 7.36 (SD 5.7, range 0–28) respectively. After adjustment, the only measure of spiritual history associated with the outcomes was the Cost of Religiousness subscale. Higher scores, indicating greater past negative religious experiences, were associated with more symptoms of anxiety (POMS, P=0.04) (Table 3) and depression (CESD, P=0.004) (Table 4). Higher scores on both the FACIT Faith and FACIT Meaning/Peace subscales were associated with fewer symptoms of anxiety (Table 3) and depression (Table 4) (P≤0.001 for both). There were no significant differences in these findings in a subgroup analysis of patients

with noncancer diagnoses only (CHF and COPD). Based on the R^2, the models explained between 22% and 60% of the variability in the outcomes.

DISCUSSION

In this study of seriously ill patients, elements of two domains of spirituality, spiritual history and current spiritual well-being, were associated with symptoms of anxiety and depression. Of the measures of spiritual history, only the Cost of Religiousness Subscale was related to the outcomes with greater past negative religious experiences associated with more symptoms of anxiety and depression. Past use of religious practices for support or participation in a religious community were not associated with anxiety and depression. On the other hand, greater current spiritual well-being, including measures of both the role of faith in illness and meaning, peace, and purpose in life were associated with fewer

Table 3. Multiple Linear Regression Analyses of Association of Subscales of Spiritual History Scale and FACIT-Sp with POMS Anxiety Subscale

Variables	*Model 1	†Model 2	‡Model 3	§Model 4	‖Model 5
	Parameter Estimate (Standard Error)				
God Helped	-0.04 (0.05) P=0.46	–	–	–	–
Life-time Religious Social Support	–	0.08 (0.08) P=0.29	–	–	–
Cost of Religiousness	–	–	0.24 (0.11) P=0.04	–	–
FACIT Faith	–	–	–	-1.19 (0.37) P=0.001	–
FACIT Meaning & Peace	–	–	–	—	-4.71 (0.55) P<0.001
Age					
Age at baseline	-0.10 (0.03) P<0.001	-0.10 (0.03) P<0.001	-0.10 (0.03) P<0.001	-0.10 (0.03) P<0.001	-0.08 (0.02) P<0.001
Gender					
Females	-1.70 (0.70) P=0.02	-1.89 (0.72) P=0.01	-1.55 (0.70) P=0.03	-1.40 (0.69) P=0.04	-1.19 (0.60) P=0.05
Males (Ref)					
Race					
White	0.44 (0.73) P=0.54	0.64 (0.71) P=0.37	0.53 (0.70) P=0.44	0.10 (0.71) P=0.88	-0.15 (0.61) P=0.81
Nonwhite (Ref)					
Marital Status					
Married	-1.35 (0.66) P=0.04	-1.26 (0.66) P=0.06	-1.19 (0.65) P=0.07	-1.17 (0.64) P=0.07	-0.83 (0.56) P=0.14
Other (Ref)					
Education					
< High school	0.88 (0.80) P=0.27	0.68 (0.80) P=0.40	0.66 (0.79) P=0.40	9.85 (0.77) P=0.27	0.26 (0.68) P=0.70
≥ High school (Ref)					
Disease Category					
CHF	1.14 (0.80) P=0.16	0.96 (0.81) P=0.24	1.02 (0.80) P=0.20	1.00 (0.78) P=0.20	0.28 (0.69) P=0.68
COPD	1.01 (0.79) P=0.20	0.83 (0.78) P=0.29	1.00 (0.77) P=0.20	1.14 (0.76) P=0.14	0.69 (0.67) P=0.30
Cancer (Ref)					
Disease Severity					
Poor/High bed	3.45 (0.83) P<0.001	3.39 (0.83) P=<0.001	3.41 (0.82) P<0.001	3.22 (0.81) P=<0.001	1.47 (0.74) P=0.499
Poor/Low bed	1.36 (0.84) P=0.11	1.32 (0.84) P=0.12	1.42 (0.83) P=0.09	1.36 (0.82) P=0.10	0.14 (0.73) P=0.84
Good/High bed	0.73 (1.02) P=0.48	0.74 (1.02) P=0.47	0.75 (1.00) P=0.46	0.44 (1.00) P=0.66	-0.17 (0.87) P=0.85
Good Low bed (Ref)					
Attendance at Religious Services					
Never/Rarely/NA	-1.04 (0.78) P=0.18	-0.79 (0.79) P=0.32	-0.63 (0.79) P=0.43	-1.33 (0.77) P=0.08	-1.31 (0.66) P=0.05
Once/Twice/A few times/ month	-0.29 (0.95) P=0.76	-0.15 (0.95) P=0.87	-0.05 (0.94) P=0.96	-0.39 (0..93) P=0.68	-0.21 (0.81) P=0.79
At least weekly (Ref)					
Religious Devotion					
Never/Rarely/less than once a week	-1.15 (0.86) P=0.19	-1.05 (0.85) P=0.22	-1.12 (0.85) P=0.19	-1.96 (0.88) P=0.03	-1.28 (0.73) P=0.08
At least once a week	-0.73 (0.88) P=0.41	-0.60 (0.88) P=0.50	-0.85 (0.87) P=0.33	-0.93 (0.86) P=0.28	-0.98 (0.75) P=0.19
Daily (Ref)					
Spirituality/Religiousness					
Not at all or slightly	-0.42 (1.29) P=0.74	0.24 (1.17) P=0.84	0.01 (1.14) P=0.99	-0.89 (1.15) P=0.44	-0.52 (0.98) P=0.60
Fairly	-0.91 (0.73) P=0.21	-0.61 (0.74) P=0.41	-0.56 (0.72) P=0.44	-1.25 (0.71) P=0.08	-1.13 (0..61) P=0.07
Very (Ref)					

Ref=Reference
R^2=0.22; †R^2=0.23; ‡R^2=0.24; §R^2=0.26; ‖R^2=0.44

symptoms of anxiety and depression. The results of this study add to our understanding of the relationship between specific elements of the spiritual experience and health outcomes in patients with serious illness.

A number of studies have found a relationship between current spiritual well-being and anxiety and depression. Like this study, most have found lower levels of anxiety and depression in patients with higher levels of spiritual well-being[7,8,24,34–41]. Much of this work has focused on cancer patients with fewer studies including those with other serious illnesses. This study extends these findings to a diagnostically diverse sample of patients, and suggests that the search for meaning, peace, and purpose in life and the role of faith in illness are important to the spiritual experience of many patients facing serious illness regardless of their specific diagnosis.

Although religious beliefs often serve as a source of support for those with serious illness, some have documented an association between religious beliefs and adverse health outcomes. For example, negative religious coping (i.e. feeling abandoned or punished by God, spiritual discontent) has been associated with an increased risk of anxiety, depression, and poor quality of life[4,5,9,24,42]. Similarly, in this study, those with more past negative religious experiences, including the extent to which past religious life has caused stress, suffering, or conflict, reported more symptoms of anxiety and depression. Additionally, reports of negative religious experiences were not limited to those who described themselves as "very religious/ spiritual". Compared to those who rated themselves as fairly religious/spiritual, both those who rated themselves as very or not at all religious/spiritual scored higher on the measure of past negative religious experiences (Table 2). Thus, even

Table 4. Multiple Linear Regression Analyses of Association of Subscales of Spiritual History Scale and FACIT-Sp with 10-Item CESD

Variables	*Model 1	†Model 2	‡Model 3	§Model 4	∥Model 5
	Parameter Estimate (Standard Error)				
God Helped	-0.08 (0.06) P=0.21	–	–	–	–
Life-time Religious Social Support	–	0.10 (0.09) P=0.26	–	–	–
Cost of Religiousness	–	–	0.39 (0.13) P=0.004	–	–
FACIT Faith	–	–	–	-2.15 (0.41) P<0.001	–
FACIT Meaning & Peace	–	–	–	–	-6.99 (0.57) P<0.001
Age					
Age at baseline	-0.07 (0.03) P=0.03	-0.07 (0.03) P=0.02	-0.07 (0.03) P=0.03	-0.07 (0.03) P=0.02	-0.04 (0.02) P=0.06
Gender					
Female	-0.84 (0.82) P=0.31	-1.09 (0.84) P=0.20	-0.60 (0.81) P=0.46	-0.30 (0.78) P=0.70	-0.08 (0.62) P=0.89
Male (Ref)					
Race					
White	0.44 (0.85) P=0.60	0.78 (0.84) P=0.35	0.65 (0.82) P=0.43	-0.15 (0.80) P=0.85	-0.38 (0.63) P=0.55
Nonwhite (Ref)					
Marital Status					
Married	-1.60 (0.77) P=0.04	-1.43 (0.77) P=0.06	-1.32 (0.76) P=0.08	-1.26 (0.72) P=0.08	-0.79 (0.58) P=0.17
Other (Ref)					
Education					
< High school	1.62 (0.93) P=0.08	1.30 (0.93) P=0.16	1.24 (0.91) P=0.18	1.54 (0.87) P=0.08	0.66 (0.66) P=0.34
≥ High school (Ref)					
Disease Category					
CHF	1.40 (0.94) P=0.14	1.13 (0.95) P=0.24	1.19 (0.92) P=0.20	1.14 (0.88) P=0.20	0.09 (0.72) P=0.89
COPD	1.35 (0.92) P=0.14	1.07 (0.92) P=0.25	1.32 (0.90) P=0.14	1.58 (0.56) P=0.07	0.84 (0.68) P=0.22
Cancer (Ref)					
Disease Severity					
Poor/High bed	6.14 (0.97) P<0.001	6.03 (0.97) P<0.001	6.06 (0.95) P=<0.001	5.71 (0.91) P<0.001	3.17 (0.76) P<0.001
Poor/Low bed	3.11 (0.98) P=0.002	3.05 (0.98) P=0.002	3.21 (0.96) P=0.001	3.11 (0.92) P=0.001	1.30 (0.75) P=0.08
Good/High bed	2.30 (1.19) P=0.05	2.36 (1.19) P=0.0493	2.36 (1.17) P=0.04	1.80 (1.13) P=0.11	1.0 (0.90) P=0.27
Good low bed (Ref)					
Attendance at Religious Services					
Never/Rarely/NA	1.08 (0.91) P=0.24	1.44 (0.93) P=0.23	1.77 (0.91) P=0.05	0.57 (0.86) P=0.51	0.71 (0.68) P=0.30
Once/Twice/A few times/ month	0.54 (1.11) P=0.63	0.75 (1.11) P=0.50	0.94 (1.09) P=0.39	0.37 (1.04) P=0.73	0.68 (0.83) P=0.42
At least weekly (Ref)					
Religious Devotion					
Never/Rarely/less than once a week	-1.41 (1.01) P=0.16	-1.22 (1.00) P=0.22	-1.32 (0.98) P=0.18	-2.87 (0.99) P=0.004	-1.56 (0.75) P=0.04
At least once a week	-0.58 (1.03) P=0.58	-0.37 (1.03) P=0.72	-0.74 (1.01) P=0.46	-0.93 (0.97) P=0.34	0.68 (0.83) P=0.23
Daily (Ref)					
Spirituality/Religiousness					
Not at all or slightly	0.53 (1.50) P=0.72	1.69 (1.34) P=0.22	1.40 (1.31) P=0.29	-0.23 (1.30) P=0.86	0.61 (1.01) P=0.54
Fairly	-0.47 (0.85) P=0.58	-0.23 (0.87) P=0.97	0.14 (0.84) P=0.87	-1.06 (0.80) P=0.19	-0.76 (0.63) P=0.23
Very (Ref)					

Ref = Reference

*R^2=0.29; †R^2=0.29; ‡R^2=0.32; §R^2=0.37; ∥R^2=0.60

seriously ill patients who do not currently consider themselves as religious/spiritual, may still struggle with conflict related to past religious life. These struggles may surface as patients search for meaning and purpose in the context of advanced illness.

The results of this study suggest that for some seriously ill patients asking about current spiritual well-being and negative religious experiences may uncover spiritual concerns which may be related to emotional distress. The most commonly used tools for completing a spiritual assessment include questions for assessing current spiritual well-being, both the role of faith in illness and whether one is able to find meaning, peace, and purpose in life[16,43,44]. Examples include: "What role does faith or belief have in your life?" "What are your sources of hope, strength, comfort, and peace?" Additionally, a single item, "Are you at peace?" has been shown to correlate with spiritual well-being[45]. Based on the response to these broad questions, physicians can inquire more

specifically about spiritual concerns and when appropriate, offer referral to a chaplain or other provider (i.e. social worker, psychologist) with expertise addressing spiritual issues.

Because most spiritual assessment tools focus on the use of spiritual beliefs and practices as a source of support and a resource for coping with illness[16,43,44], healthcare providers may feel less comfortable asking about negative religious experiences. Below is an example of how physicians can explore and respond to concerns related to negative religious experiences.

Physician: "What role, if any, does faith or spirituality play in your life?"

Patient: Not much.

Physician: Was there a time when religion or spirituality was more important in your life?

Patient: Yes, when I was growing up.

Physician: What changed?

Patient: We used to go to church every week. But after a while I looked around and decided they were all a bunch of hypocrites, so I never went back.

Physician: It sounds like that was a difficult time for you. People with serious illness often think a lot about religious and spiritual experiences. Have you been thinking about any of this lately?

Patient: Yes, I have.

Physician: Tell me more.

Patient: I'm not sure what I believe now, and when you think about being really sick, it sure would help if I had some clear answers.

Physician: That is tough. I'd love to hear more about that.

After further discussion

Physician: How can I help?

Patient: I don't know.

Physician: Would you be interested in speaking with a chaplain about your experiences and feelings?

The dialogue above is one example of how physicians might ask patients about past negative religious experiences. Not all patients will volunteer these experiences in response to a general question, but some will. Also, not all patients with prior negative religious experiences will have emotional distress related to these experiences. In the absence of emotional distress or concerns, physicians may choose to listen empathetically, but may not find the need for further action. However, if patients express spiritual concerns or distress related to past religious experiences, physicians can offer referral to a chaplain. Although chaplains are trained to provide spiritual care regardless of patients' beliefs and practices, some patients with prior negative religious experiences may not want to discuss their concerns with someone whom they identify as a "religious" care provider. In those cases, referral to a social worker or psychologist with experience addressing religious or spiritual concerns may be helpful.

This study has some limitations. The majority of participants were non-Hispanic Whites who identified themselves as Christian and resided in southeastern United States. Our results may not be applicable to patients of other religious groups, those in other geographic regions, or because of the inclusion criteria, those with less advanced illness or stable chronic disease. Another issue is that we were not able to determine causality. We do not know if concerns related to current spiritual well-being or past negative religious experiences cause anxiety and depression or if anxiety and depression lead to concerns in these domains of spirituality.

The findings of this study provide an empirical basis for the relationship between some domains of spirituality and symptoms of anxiety and depression in seriously-ill patients. Future research should examine how information obtained in a spiritual assessment focusing on those domains of spirituality associated with adverse health outcomes can be used to improve patient care.

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