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# Assessing Spirituality and Religiousness in Advanced Cancer Patients

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The aim of this study was to translate the Spiritual Involvement and Beliefs Scale into the Greek language and validate its psychometric properties in a sample of advanced cancer patients treated in a palliative care unit. The scale was translated into Greek with the “forward-backward” procedure. It was administered twice, with a 3-day interval, to 82 patients with advanced cancer. Patients completed the Spiritual Involvement and Beliefs Scale and the Greek Hospital Anxiety and Depression Scale. The scale had an overall Cronbach  $\alpha$  of 0.89. Overall test-retest reliability was satisfactory

at  $P < .0005$ . Satisfactory construct validity was supported between the Spiritual Involvement and Beliefs Scale subscales and Hospital Anxiety and Depression subscales. Interscale and interitem correlations were found satisfactory at  $P < .0005$ . These results support that the Spiritual Involvement and Beliefs Scale is an instrument with satisfactory psychometric properties and is a valid research tool for spirituality in advanced cancer patients.

**Keywords:** cancer; spirituality; palliative care

During the past 2 decades, health care has moved toward a more inclusive biopsychosocial model of patient care, emphasizing the importance of psychologic and environmental factors on health.<sup>1</sup> At the end of the 1980s, many argued for expanding this model to include a spiritual dimension, suggesting that at the very least, spiritual variables are fundamental determinants of psychologic variables which are, in turn, determinants of physical and social variables.<sup>2</sup>

Although the importance of spirituality as a central component of psychologic well-being is increasingly recognized by health care and mental health professionals,<sup>3</sup> research reveals that physicians are often reluctant to explore spiritual issues with their patients.<sup>4</sup> Among the medically ill and terminally ill, in particular, patients struggle with questions about their mortality, the meaning and purpose of life, and

whether a greater power exists, forcing them to grapple with issues they had previously ignored.<sup>5</sup> Exploratory studies of individuals after a potentially fatal diagnosis have repeatedly found a quest for meaning that results in increased religious interest and activity as a response to crisis,<sup>6</sup> whereas others find support through their spiritual beliefs outside the context of organized religion.

Spirituality and religion are often used synonymously but actually have different meanings.<sup>7</sup> Spiritual “well-being” comprises the 2 dimensions of existential and religious well-being.<sup>7</sup> It is perhaps best defined as the “way in which people understand their lives in view of their ultimate meaning and value.”<sup>8</sup> Kearney and Mount<sup>3</sup> stated that spiritual issues “lie at the very center of the existential crisis that is terminal issues.” Religion is a shared system of organized beliefs and practices involving a Higher Power.<sup>9</sup> People with positive religious coping engage the Divine as a partner to manage their crisis.<sup>10</sup> Their relationship with God brings them Someone to go to for support, guidance, and strength. Prayer decreases isolation by putting people in touch with the Divine. Thus, by calling on a Superior Being, individuals increase their sense of hope and their perceptions of resources and inner strength, and decrease their

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perceived loneliness. Moreover, attending religious services brings people together in a supportive environment; the shared belief system in itself decreases the sense of isolation accompanying crisis or trauma.

In 1998, Pargament et al<sup>10</sup> suggested a 2-factor model of religious coping in response to stressful events. It encompasses a number of positive and negative religious coping styles, such as religious forgiveness, spiritual connection and purification, and collaborative religious coping.<sup>10</sup> Outcomes of positive religious coping include reduced depression.<sup>11</sup> Conversely, negative religious coping is associated with increased depression and poorer mental health.<sup>11</sup> The degree of religious coping is dependent on the personal identity and degree to which religion is a major world view for the individual.<sup>11</sup> Thus, observing behavior such as service attendance or prayer does not in itself predict a positive outcome. The issue is how that person perceives God and interprets the events in light of that perception.<sup>12</sup>

Growing data have provided empirical support for the hypothesis that spiritual well-being might help to bolster psychologic functioning and adjustment to illness.<sup>13</sup> In addition, spiritual well-being in cancer patients has been found to positively correlate with subjective well-being, fighting spirit, and positive mood states<sup>14</sup>; whereas low levels of spirituality have been found to correlate with depression, anxiety, hopelessness, and suicidal ideation.<sup>15</sup>

The Spiritual Well-Being Scale<sup>16</sup> is the instrument most commonly used. Other available scales, such as the Religious Orientation Scale<sup>17</sup> and the Index of Religiousness,<sup>18</sup> assess any religious beliefs and behaviors. The Spiritual Involvement and Beliefs Scale (SIBS) was designed to assess needs and outcomes of spiritual care. It is applicable across various religious traditions. The authors report that by using "generic wording," it does not show cultural-religious bias and that it is of broader scope compared with other spiritual scales.<sup>19</sup> The aim of this study was to translate the SIBS into the Greek language and validate it in a sample of advanced cancer patients treated in a palliative care unit.

## Methods

The study took place in a palliative care unit in Athens, Greece. The study was performed in accordance with the Helsinki Declaration and according to European Guidelines for Good Clinical Practice. Patients suffering from incurable cancer attend the unit for pain relief and cancer-related symptoms.

Criteria for inclusion in the study were historically confirmed malignancy, age older than 18 years, ability to communicate effectively with the health care professionals, and informed patient consent. Patients were excluded if there were a history of drug abuse, a diagnosis of a psychotic illness, or significant cognitive impairment. Patients were seen individually either at outpatient clinics or on the wards. A total of 102 patients fulfilled the study criteria and were eligible to enter the study. Excluded from the study were 20 patients (19.6%) who did not complete the assessment forms, either because of refusal or long distance. The final sample consisted of 82 patients.

Participants were asked to complete 2 self-report questionnaires: the Greek version of the Spiritual Involvement and Beliefs Scale (G-SIBS) and the Greek version of the Hospital Anxiety and Depression (G-HAD) scale. A self-report demographic questionnaire obtained information on the patient's age, gender, marital status, and educational level.

In addition, a medical record form was completed by either a nurse at the study site or by the investigator. Disease status information included the cancer diagnosis, past anticancer treatment (chemotherapy, radiotherapy), and performance status measuring the patient's overall physical functioning as defined by the Eastern Cooperative Oncology Group (ECOG): 0 = optimum performance status, 4 = worse performance status.<sup>20</sup> The sociodemographic and clinical data of the participant patients are presented in Table 1.

## Instruments

The SIBS consists of 26 questions scored on a 5-point ordinal scale (strongly agree, agree, neutral, disagree, or strongly disagree). It consists of 4 loosely specific domains:

1. internal beliefs, which are assessed with items such as "I can find meaning in times of hardship";
2. external practices, which are categorized with statements such as "During the last month, I participated in spiritual activities with at least one other person (0 times, 1 to 5 times, etc)";
3. personal application, such as practicing humility and forgiveness toward other people, which is assessed with statements such as "When I wrong someone, I make an effort to apologize"; and
4. existential and meditative beliefs, which are investigated using statements such as "A spiritual force influences my life."

**Table 1.** Demographic and Disease-Related Patient's Characteristics

	N	%
Age		
Mean, 63.3 years; range, 32-85		
Gender		
Male	47	57.3
Female	35	42.7
Diagnosis		
Gastrointestinal	27	32.9
Lung	14	17.1
Urogenital	23	28.0
Breast	13	15.9
Other	5	6.1
Education level		
Primary	38	46.3
High school	27	33.0
College and above	17	20.7
Family status		
Married	50	61.0
Single	13	15.9
Widowed	16	19.5
Divorced	3	3.7
ECOG score		
0 – 1	38	46.3
2 – 3	44	53.7
Chemotherapy		
No	40	48.8
Yes	42	51.2
Radiotherapy		
No	46	56.1
Yes	36	43.9
Opioids		
Mild	43	52.4
Strong	39	47.6

NOTE: ECOG = Eastern Cooperative Oncology Group.

The internal consistency of the original SIBS has yielded a Cronbach  $\alpha$  of 0.92. Test-retest reliability, has a coefficient of stability of 0.92, and the convergent construct validity has shown a reliability coefficient of 0.80.<sup>19</sup>

Psychologic distress was assessed using the Greek version of the HAD scale.<sup>21</sup> It has been standardized in a sample of advanced Greek cancer patients, proving it a useful screening measure for anxiety and depression in this sensitive patient population.<sup>21</sup> The internal consistency, as assessed by the Cronbach  $\alpha$ , was 0.845 for the total scale, 0.887 for the anxiety subscale, and 0.703 for the depression subscale.<sup>21</sup> It is a self-assessment mood scale specifically designed for use in hospital departments.<sup>22</sup> It is brief and limited to the 2 most common aspects of psychologic

disorders presenting in hospital practice: anxiety and depression.

Each of the two subscales, HAD-A (anxiety) and HAD-D (depression), consist of 7 items, each rated on a 4-point scale (0 = no problems; 3 = maximum distress) by the researchers.<sup>22</sup> Evidence is presented that the scale scores are not affected by the presence of bodily illness.<sup>22</sup> In their original study, the authors recommend 3 cutoff scores for both subscales: 0-7, noncases; 8-10, doubtful cases for both anxiety and depression (with possible ranges of 0 to 21 for each subscale), and 11 or greater, cases. In 1983, Zigmond and Snaith<sup>22</sup> interpreted HAD as a bidimensional instrument, assessing anxiety and depression independently, so we decided to use this interpretation in the present study.

### Translation

The “forward-backward” procedure was applied to translate the SIBS scale from English into Greek. Two independent translators translated it into Greek, and then another 2 independent translators translated it back into English. A matching of these translations was then conducted.

### Statistical Analysis

Descriptive statistics, including means, counts, and percentages for the variables, were calculated. To evaluate validity, the following methods were used: (1) interscale and total correlations (Pearson correlation coefficients); (2) convergence validity examining the correlation between the items and the scale (Pearson correlation coefficients); (3) known-groups validity by detecting group differences according to disease severity as measured by the ECOG performance status (independent samples *t* test); and (4) concurrent validity (the performance of the SIBS scale relative to the other commonly used questionnaire, G-HAD scale, was based on Pearson correlation coefficients).

To assess the reliability of the questionnaire, the internal consistency (Cronbach  $\alpha$  coefficients), and test-retest using 4 different approaches (Pearson *r* value, Kendall  $\tau$ -b, and paired samples *t* test) were calculated.<sup>23,24</sup> No cases were omitted from the analyses because of missing data. The statistical software SPSS 10.0 (SPSS, Chicago, Ill) for Windows (Microsoft Corp, Redmond, Wash) was used for the statistical analyses.

**Table 2.** Correlational Results With Individual Items on the Spiritual Involvement and Beliefs Scale

Item No	Mean	SD	Cronbach Correlational Analyses	
			Total Score Correlation	$\alpha$ if Item Deleted
1	1.9259	.99722	-.099	.906
2	4.1605	1.16680	.629	.892
3	2.6790	1.38589	.313	.900
4	3.6173	1.29004	.397	.897
5	3.7160	1.12065	.680	.891
6	3.7037	.99303	.685	.892
7	3.7037	1.12299	.630	.892
8	4.2593	1.14867	.516	.895
9	3.3704	1.29850	.538	.894
10	3.6296	1.19838	.777	.889
11	3.3086	1.21081	.459	.896
12	4.7037	.81309	.548	.895
13	1.8025	1.23915	.029	.905
14	4.0123	1.08965	.820	.888
15	3.3951	1.43770	.415	.897
16	3.3580	1.18647	.503	.895
17	3.3086	1.13624	.413	.897
18	4.5432	.92262	.078	.902
19	3.5556	1.18322	.770	.889
20	4.3827	.94297	.392	.897
21	4.0247	.97436	.614	.893
22	2.4691	1.09643	.578	.893
23	4.0988	.94346	.328	.898
24	3.0864	1.37111	.650	.891
25	2.1481	1.30491	.408	.897
26	1.6296	.71492	.576	.895

## Results

### Item Total and Subscale Correlations

Factor 1 items showed a significant correlation with the External/Ritual subscale (range, 0.475 to 0.840;  $P < .0005$ ). Similarly, statistically significant correlations were shown for factor 2 items with the Internal/Fluid subscale (range, 0.240 to 0.841;  $P < .0005$ ), factor 3 items with the Existential/Meditative subscale (range, 0.58 to 0.77;  $P < .0005$ ), and factor 4 items with the Humility/Personal Application subscale (range, 0.51 to 0.795;  $P < .0005$ ). The subscales correlated significantly with each other (range, 0.625 to 0.836;  $P < .0005$ ).

### Internal Consistency

The internal consistency, as assessed by Cronbach  $\alpha$ , was 0.899 for the total scale, and all items had a correlation of more than 0.8 with both the total SIBS score and the Cronbach adjusted total score

(Table 2). The Cronbach  $\alpha$  for the subscales was 0.915 for the External/Ritual, 0.781 for the Internal/Fluid, 0.801 for the Existential/Meditative, and 0.584 for the Humility/Personal (Table 3).

### Test-Retest Reliability

The test-retest reliability of patients' responses was evaluated by having all the participant patients complete the questionnaire on 2 occasions, an average of 3 days apart. The results of stability (Pearson  $r$ , Kendall  $\tau$ -b) indicated that the SIBS scores were remarkably consistent between the 2 occasions (Table 4) and were highly significantly correlated ( $P < .0005$ ).

### Known-Groups Validity

The SIBS scale was examined in terms of the ability of its scales to distinguish between subgroups of patients formed on the basis of their disease severity.



**Table 3.** Cronbach  $\alpha$  Coefficients and Subscale Means for the Spiritual Involvement and Beliefs Scale Subscales

Subscales	Cronbach $\alpha$	Mean	SD
External/Ritual	.915	43.56	10.36
Internal/Fluid	.781	37.19	7.18
Existential/Meditative	.801	21.99	5.62
Humility/Personal Application	.584	14.99	2.65

**Table 4.** Test-Retest Reliability of Spiritual Involvement and Beliefs Scale Subscales

Subscales	Pearson Correlation Coefficient		Paired <i>t</i> test
		Kendall $\tau$ -b	Mean diff $\pm$ SEM
External/Ritual	.835 <sup>a</sup>	.892 <sup>a</sup>	.58 $\pm$ .46 <sup>b</sup>
Internal/Fluid	.812 <sup>a</sup>	.868 <sup>a</sup>	.69 $\pm$ .36 <sup>b</sup>
Existential/Meditative	.983 <sup>a</sup>	.946 <sup>a</sup>	.30 $\pm$ .14 <sup>b</sup>
Humility/Personal Application	.960 <sup>a</sup>	.900 <sup>a</sup>	-.04 $\pm$ .12 <sup>b</sup>

a.  $P < .0005$ .

b.  $P = NS$ .

Clinical status (ie, disease severity) was expressed in terms of ECOG performance status. The SIBS scale discriminated well between subgroups of patients, indicating that External/Ritual and Internal/Fluid subscale scores were significantly higher in patients with a good or moderate performance status compared with patients with a poor performance status. The depression scores were higher in patients with a poor performance status, although this was not statistically significant (Table 5).

### Concurrent Validity

Concurrent validity was assessed by correlating the SIBS subscales with indicators of psychologic distress (G-HADS). The correlation between SIBS subscales and HAD-Anxiety was 0.305 to 0.498, and between SIBS subscales and HAD-Depression was 0.208 to 0.545 ( $P < .05$ ,  $P < .005$ ; Table 6).

### Discussion

Addressing spiritual needs and existential questions among the dying is generally neglected in palliative

**Table 5.** Scores by Eastern Cooperative Oncology Group Status, Combined Validity Samples

	ECOG	N	Mean	SD	P
External/Ritual	0-1	38	46.50	9.09	.016
	2-3	43	40.97	10.81	
Internal/Fluid	0-1	38	38.73	5.88	.052
	2-3	43	35.83	7.98	
Existential/Meditative	0-1	38	22.89	4.14	.176
	2-3	44	21.20	6.58	
Humility/Personal Application	0-1	38	15.34	2.43	.262
	2-3	44	14.68	2.81	

NOTE: ECOG = Eastern Cooperative Oncology Group.

**Table 6.** Correlation Coefficients Between Spiritual Involvement and Belief Scale Subscales With Hospital Anxiety and Depression Scores

Subscales	Anxiety	Depression
External/Ritual	.305 <sup>a</sup>	.280 <sup>a</sup>
Internal/Fluid	.498 <sup>b</sup>	.545 <sup>b</sup>
Existential/Meditative	.426 <sup>a</sup>	.502 <sup>a</sup>
Humility/Personal Application	.330 <sup>a</sup>	.310 <sup>a</sup>

a.  $P < .05$ .

b.  $P < .005$ .

care practice but could be a crucial aspect of psychologic functioning.<sup>3</sup> This was the aim of the present study: to translate and validate the Spiritual Involvement and Beliefs Scale in a palliative care population. Such an instrument can facilitate the integration of spirituality with medicine in that it provides physicians with a quantitative, credible method of spiritual inquiry with their patients, and it provides an avenue for integrating spiritual assessment with traditional medicine, much in the way that the mental status examination integrates mental assessment with traditional medicine.<sup>25</sup>

In the present study, the recommendation that the Cronbach  $\alpha$  coefficient should be at least 0.60 for a self-report instrument to be reliable was fulfilled, thus supporting the robustness of the instrument. The SBIS subscales showed a high internal consistency, with Cronbach  $\alpha$  values of 0.584 to 0.915. Correlation coefficients between subscales are considered high, and the same may be said about correlation coefficients between items and total scale scores.

The known-groups validity indicated that the Greek version of the SIBS scale is a valid instrument for measuring spirituality in patients with advanced

cancer. It was able to discriminate between patients with different disease severities, as this was measured according to ECOG performance status.

The test of concurrent validity revealed that compared with the commonly used questionnaire, HAD-Anxiety and HAD-Depression were low to moderate. More specifically, patients with high levels of spiritual well-being scores were less likely to be anxious or depressed, consistent with previous findings.<sup>26</sup> In other studies of physically healthy individuals, similar results have been reported, suggesting that spiritual well-being is a central component of psychologic health.<sup>27</sup> Because psychologic distress happens frequently at the end of life, maintenance or development of a sense of spiritual well-being might be a crucial aspect of coping with terminal illness.<sup>7</sup> Feelings of depression and anxiety are common reactions of individuals as they approach the terminal phase of an illness.<sup>28</sup>

The highest mean scores, with a range of 4.16 to 4.70, were found in item 2 (“I can find meaning in times of hardship”), item 8 (“My life has a purpose”), item 12 (“I believe there is a power greater than myself”), item 18 (“I have felt pressured to accept spiritual beliefs...”), and item 20 (“When I wrong someone, I make an effort to apologize”). On the other hand, the lowest mean scores, with a range of 1.6 to 1.9, were found in item 1 (“In the future, science will be able to explain everything”), item 13 (“I probably will not reexamine my spiritual beliefs”), and item 26 (“Last month I participated in spiritual activities...”).

Our findings that patients had a mean score of 3.086 for item 24 (“During the last week, I prayed...”) and a mean score of 1.62 for item 26 (“Last month I participated in spiritual activities with at least one other person...”) are in accordance with previous findings that private religious activities such as prayer were actually related to poorer physical health.<sup>29</sup> It may be that the patients who are doing the worst physically feel the greatest need to rely on their faith for comfort. A cross-sectional study of 3851 elderly patients found that those who prayed or read the Bible often had greater physical disability than those who engaged in those practices weekly.<sup>29</sup> This may be best understood with the stressor response model as articulated Ellison and Levin.<sup>30</sup> In this model, stressors, such as physical discomfort, prompt individuals to increase the frequency of their religious behaviors.

Particularly in palliative care, there is a need to respond not only to physical suffering, mental

suffering, and social problems but also to questions of the meaning and values given to human existence and the spirituality associated with such meanings.<sup>31</sup>

## Conclusion

The findings of this validation study indicate that the Greek version of the SIBS scale is a reliable and valid measure and can be used with patients with advanced cancer. Our findings may have valuable applications in palliative care practice. Future research on the potential negative effects of religion on health is needed by designing studies that detect both potential beneficial and adverse effects. There is much to learn about the complex relationship between spirituality/religion and health. Palliative care clinicians should be alert to symptoms of spiritual distress and intervene accordingly. Future research is needed to identify optimal techniques to address negative religious coping.

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