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A Psychometric Analysis of the Spiritual Needs Inventory in Informal Caregivers of Patients With Cancer in Hospice Home Care

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Cancer caregiving affects the physical, social, emotional, and spiritual well-being of caregivers (Northouse, 2005). In addition, spiritual appraisals of caregivers of the terminally ill have been shown to predict situational and mental health outcomes (Mickley, Pargament, Brant, & Hipp, 1998). However, the systematic assessment of spirituality and spiritual needs of caregivers is not routinely conducted. The *Clinical Practice Guidelines for Quality Palliative Care* from the National Consensus Project for Quality Palliative Care (2009) recommends the use of standardized assessment instruments to assess, document, and re-evaluate spiritual and existential care needs of patients and caregivers. The Spiritual Needs Inventory (SNI) is an instrument developed and validated as a measure of the spiritual needs of patients near the end of life (Hermann, 2006). Patients and caregivers are known to reflect mutuality in psychiatric and spiritual measures (Bambauer et al., 2006; Fleming et al., 2006; Sherman et al., 2005; Taylor, 2003), so researchers theorized that a spiritual needs instrument developed for patients may have use for informal caregivers. The purpose of the current study was to test the validity and reliability of the SNI in measuring the spiritual needs of informal caregivers of patients with cancer in hospice home care.

Background

Caregiving at the End of Life

Caregivers describe the experience of caregiving as life-changing and consuming, and are known to provide large amounts of invisible health care at the end of life (Northouse, 2005; Sawatzky & Fowler-Kerry, 2003). Caregivers of hospice patients were found to provide an average of 120 hours of caregiving per week (Haley,

Purpose/Objectives: To test the validity and reliability of the Spiritual Needs Inventory (SNI) in measuring the spiritual needs of informal caregivers of patients with cancer in hospice home care.

Design: A subanalysis of a longitudinal, randomized hospice clinical trial.

Setting: Two hospices in the southwestern United States.

Sample: 410 informal caregivers of patients with cancer in hospice home care.

Methods: To test the hypotheses, Pearson and Spearman correlations, principal factor analysis with oblique rotation, and coefficient alpha were conducted.

Main Research Variables: Spiritual needs, depression, social support.

Findings: The SNI showed a small but significant positive correlation with the social support ($p = 0.003$). A three-factor solution of the SNI accounted for about 55% of the variability. The first factor captured a traditional religious measure, with the original patient-reported subscales of inspiration, spiritual activities, and religion collapsing into this one factor. The second and third factors were similar to the original patient study. Cronbach alpha for the total scale was 0.88. The factor alphas ranged from 0.68–0.89.

Conclusions: The current study provides early evidence for the validity and reliability of the SNI in informal caregivers of patients with cancer in hospice home care. Additional testing in other populations is recommended.

Implications for Nursing: Use of the SNI with hospice caregivers could aid nurses in the identification of spiritual needs, enabling the development of plans of individualized, high-quality care.

LaMonde, Han, Narramore, & Schonwetter, 2001). In addition, unmet needs in the hospice caregiver lead to increased burden and risk for failure (Fleming et al., 2006). However, social support and caregiver coping are known to impact caregivers' perception of burden.

Caregivers who accept the illness of their loved one and redefine caregiving problems as more manageable experience less strain (Groß, Fosså, Sørebo, & Dahl, 2006; Redinbaugh, Baum, Tarbell, & Arnold, 2003). Caregivers rely on personal faith and spiritual practices as additional means to cope with cancer caregiving (Weaver & Flannelly, 2004). Caregivers who appraise their situation positively in relationship to God have been shown to score higher on mental and spiritual health outcome measures than those who view their situation as punishment or abandonment by God (Mickley et al., 1998).

Spirituality and Spiritual Needs in Caregivers of Hospice Patients

Spirituality is understood to be an inherent human attribute involving the dimensions of immanence and transcendence, although it may or may not involve overt religious practice (Buck, 2006; Hermann, 2000). Spiritual needs have been defined as something that the person wants or needs to find purpose and meaning in life (Hermann, 2006; Murray, Kendall, Boyd, Worth, & Benton, 2004). Caregivers have been able to identify spiritual needs but have problems distinguishing them from psychosocial needs (Murray et al., 2004; Taylor, 2003). Specific spiritual needs identified by caregivers include hope and gratitude, giving and receiving love, reviewing beliefs, creating meaning, finding purpose, relating to an "Ultimate Other" (Taylor, 2003, p. 265), practicing religious traditions, and keeping a positive outlook (Buck & McMillan, 2008; Murray et al., 2004; Taylor, 2003). In one study, 71% of hospice caregivers indicated that prayer was frequently or always a need (Buck & McMillan, 2008). Expressions of frustration, fear, hurt, doubt, or despair are reflective of unmet spiritual needs, but caregivers are reluctant to discuss their needs or use spiritual support services until they feel comfortable with the healthcare staff (Murray et al., 2004; Taylor & Mamier, 2005). Unmet spiritual needs are significantly related to caregiver symptoms of depression (Buck & McMillan, 2008).

Spiritual Needs Inventory

The SNI was developed to measure spiritual needs and whether they were met in the hospice patient population. Maslow's theory of motivation provided the theoretical framework for instrument development and items were developed from a qualitative study involving hospice patients (Hermann, 2006). The SNI has two parts. First, the person is asked to rate the items in response to the stem: "In order to live my life fully, I need to . . ." That stem is followed by items such as "sing/listen to inspirational music" and "talk with someone about spiritual issues." The participant responds on a Likert-type scale ranging from 1 (never) to 5 (always). A higher score represents a greater

spiritual need. The respondents then indicate which of the needs remain unmet by marking "yes" or "no" in the second part. Initially, 29 spiritual needs were identified and an item was written for each. Several needs related to the need for nature were collapsed together, resulting in 27 items. Content validity first was assessed using expert rater panels, inclusive of nurses, chaplains, sociologists, a statistician, and laypeople. Then, a psychometric analysis was conducted with a sample of 100 hospice patients. Eight items were deleted for low correlations. Factor analysis then was conducted on the 19-item SNI. Two items were removed when they emerged as unique factors. The 17-item SNI then was analyzed and five factors were extracted, explaining about 64% of the variance using principle component factor analysis with promax oblique rotation. The five factors were labeled by the developer as outlook, inspiration, spiritual activities, religion, and community. Reliability was reported as 0.85, using coefficient alpha for the total score, and ranged from 0.62–0.78 for the subscales.

The aim of the current study was to present a psychometric analysis of the SNI in informal caregivers of patients with cancer in hospice home care and provide evidence for the validity and reliability of the instrument in this new population. The following hypotheses were tested.

- H₁: SNI scores will be significantly correlated with depressive symptoms, as measured by the Center for Epidemiological Studies–Depression (CES-D) scale.
- H₂: SNI scores will be significantly correlated with social support, as measured by the Received Social Support and Satisfaction (RSSS) scale.
- H₃: Factor analysis will confirm the five subscales from the original psychometric work.
- H₄: SNI total and subscale scores will demonstrate reliability through strong internal consistency using Cronbach alpha.

Methods

Sample

The sample consisted of caregivers of patients with cancer receiving hospice home care in two hospices in the southeastern United States. Inclusion criteria included being identified by the hospice as the primary caregiver of a patient with cancer, being aged 18 years or older, and providing at least four hours of patient care a day. Caregivers were excluded if they were in active treatment for cancer themselves or were unable to score at least 7 or higher on the Short Portable Mental Status Questionnaire (Pfeiffer, 1975). All caregivers meeting the criteria were approached by trained research assistants within 24–72 hours of patient admission to hospice.

Instruments

Spiritual Needs Inventory: The SNI, a 17-item questionnaire, measures the extent to which certain items are identified by the person as needed to live their lives fully and results in scores ranging from 17–85; higher scores represent greater spiritual need. The person then indicates which of those needs remains unmet by marking “yes” or “no.” The unmet needs are summed to get a score from 0–17. Validity was assessed using factor analysis and reliability was assessed using Cronbach alpha, as reported previously (Hermann, 2006).

Center for Epidemiological Studies–Depression scale: The 10-item version of the CES-D was developed to balance respondent burden and psychometric concerns while measuring depressive symptomatology (Radloff, 1977). Items are scored as present or absent. Possible scores range from 0–10, with a lower score signifying less depressive symptoms. Irwin, Artin, and Oxman (1999) assessed the psychometric characteristics of the short form and reported a Cronbach alpha of 0.92 and test-retest reliability of 0.83. Correlation of the short form and full CES-D was 0.88, suggesting that the short form is highly correlated with the widely validated full version.

Received Social Support and Satisfaction scale: Social support, or perceptions of help received from others, was assessed via a three-item measure from the work of Krause and Borawski-Clark (1995). The satisfaction with support subscale (three items, $\alpha = 0.69$) of the RSSS was used. The self-report summated rating scale has total scale scores ranging from 3 (lowest perceived support) to 12 (highest perceived support).

Demographic data: Standard demographic data were collected to describe the sample, including age, race, gender, religious affiliation, education level, relationship to the patient, whether other caregivers helped and how many, marital status, household income, and living arrangements.

Procedure

Approval for this study was obtained from both of the hospices involved and the institutional review board at the University of South Florida in Tampa. All caregivers who met the inclusion criteria and agreed to participate in the study were contacted and informed consent was obtained. The caregiver then was given the instruments to fill out and the research assistant reviewed the data for missing items.

Data Analysis

In this subanalysis of the baseline data in a longitudinal clinical trial, no meaningful differences were found when the bivariate correlations of the SNI items from the two hospices were analyzed by site, so the data

were combined. Next, an analysis of missing data was conducted. Ninety-six percent of the sample had complete data. When participants with missing data were excluded, the total sample size was 410. Additional analysis showed no patterns of missing data.

Data then were tested and found compliant with the assumptions of the conducted tests. Descriptive statistics of the demographic data and instrument data were compiled and assessed. Pearson and Spearman correlations were used to assess the relationships between the SNI and the other instruments. The total SNI score for spiritual needs was obtained by summing each caregiver's responses on the Likert-type scale for each of the 17 items; a higher score indicated greater need. All of the psychometric testing that follows was conducted on the ratings from that scale. Principal factor analysis (PFA) with oblique rotation was conducted using SPSS®, version 15.0, to further explore the factorial structure. As far as was possible, the methodology of the instrument developer was followed so that comparisons between the patient data and caregiver data would be more meaningful. The decision to conduct the analysis in this manner was based on Tabachnick and Fidell's (2000) criteria for the comparisons of two factor solutions—that the number of factors are hypothesized to be the same for both of the studies, the variables are hypothesized to load highly on the same factors, and the same descriptive labels are used for the factors. Reliability for the SNI was assessed using the Cronbach alpha for the total and subscale scores. Finally, an item level analysis was conducted.

Results

Sample

A total of 410 caregivers of newly admitted patients with cancer in hospice home care were analyzed. The average caregiver was aged 65 years and had completed 13 years of school (see Table 1). Most of the sample was female, married to the patient, Caucasian, and self-identified as a member of a Christian denomination. About 69% indicated that they lived with a spouse. The difference between the percentage married (78%) and those living with a spouse reflects those older married couples who now live with other family members. When asked, 40% of the caregivers reported having help with their caregiving and about 30% of those reported the help of one to two additional caregivers.

Validity

Table 2 reports the instrument scores, means, and standard deviations, as well as the range of possible scores. The mean number of unmet needs reported by the caregivers was 1.36 (SD = 2.6). H_1 hypothesized that a significant correlation of the SNI would exist

with depressive symptomatology, as measured by the CES-D. However, the correlation was not found to be significant and this hypothesis was not supported. A significant correlation with social support, as measured by the RSSS, also was hypothesized (H_2). A significant positive but weak correlation between the SNI and the RSSS was observed ($r = 0.14$, $p = 0.003$).

Table 1. Demographic Characteristics

Characteristic	$\bar{X}$	SD
Age (years)	64.78	13.91
Years of school	13.11	2.63
Characteristic	n	%
Gender		
Male	105	26
Female	305	74
Marital status		
Married	320	78
Widowed	30	7
Divorced	40	10
Other	20	5
Religious affiliation		
Christian	353	86
Jewish	5	1
Other	4	1
None	48	12
Ethnicity		
Caucasian	392	96
Hispanic	6	2
African American	4	< 1
Other	8	2
Relationship to patient		
Wife	175	43
Husband	70	17
Daughter	59	14
Son	20	5
Parent	9	2
Other	77	19
Living arrangement		
With spouse or partner	283	69
With children	48	12
Alone	7	2
Other	72	18
Additional caregivers		
Yes	165	40
No	245	60
Number of additional caregivers		
One	81	20
Two	41	10
Three or more	35	9
Did not specify	8	2
Household income (\$)		
Less than 10,000	21	5
10,000–19,999	53	13
20,000–29,999	98	24
30,000–49,999	87	21
50,000–69,999	44	11
70,000–99,999	23	6
Declined to answer	84	21

N = 410

Note. Because of rounding, not all percentages total 100.

PFA with an oblique rotation was used to explore the factorial structure and test the third hypothesis. Sampling adequacy was confirmed by a Kaiser-Meyer-Olkin statistic of 0.91. Using a minimum eigenvalue of 1 as the criterion for the factors, a three-factor solution accounted for about 55% of variability in the initial solution. Inspection of the scree plot supported that decision. Factor 1 accounted for 35% of the variance, factor 2 accounted for 12% of the variance, and factor 3 accounted for 7% of the variance. See Table 3 for SNI items by factor with factor loadings, eigenvalues, communalities, and patient subscale placement. Overall, the factor structure that emerged was easily interpreted. Analysis of the pattern and structure matrices for the three factors show that the first factor appears to capture a traditional religious measure; the subscales that measured inspiration, spiritual activities, and religion in an earlier patient sample collapsed into this one factor in the current study. The second factor is closest to the outlook subscale in the original patient study, and the third factor captures the subscale identified as the community subscale in the original study. Factors 1 and 2 were positively correlated ($r = 0.41$), whereas factors 1 and 3 ($r = -0.34$) and factors 2 and 3 ($r = -0.45$) were negatively correlated.

Reliability

The authors' fourth hypothesis postulated that the SNI total and subscale scores would demonstrate reliability through strong internal consistency using the Cronbach alpha. The coefficient alpha for the total 17-item SNI was 0.88. Item-to-total correlations ranged from 0.33–0.72; however, alpha if item deleted statistics for the total score ranged from 0.87–0.88, indicating no need to delete items. Using the factor analysis findings, variables for the three factors were created by summing the items that loaded on the factor. The reliability of those factors (subscales) then was tested by calculating a Cronbach alpha for each of the three subscales. Factor 1 (religious subscale) coefficient alpha was 0.89, factor 2 (outlook subscale) coefficient alpha was 0.71, and the coefficient alpha for factor 3 (community subscale) was 0.68.

Item Analysis

Item analysis of the 17 items of the SNI showed that inter-item correlations ranged from 0.1–0.7 (see Table 4). The correlations for items within a subscale ranged from 0.44–0.7 for factor 1, 0.3–0.46 for factor 2, and 0.4–0.45 for factor 3. All correlations for items of different subscales were less than 0.4. Only one item, "talk about day-to-day things," correlated more or as highly (0.34 and 0.31, respectively) with another factor than its own. The item means ranged from 2.54–4.37 on a 1–5 scale, with item skew ranging from –1.33 to 0.48 and item kurtosis ranging from –1.59 to 2.59 (see Table 5). The

Table 2. Scores by Instrument

Instrument	$\bar{X}$	SD	Possible Scores
Spiritual Needs Inventory	58.18	13	17–85
Center for Epidemiological Studies–Depression	3.13	2.14	0–10
Received Social Support and Satisfaction	10.75	1.34	3–12

Note. For the Spiritual Needs Inventory, higher scores indicate greater spiritual need. For the Center for Epidemiological Studies–Depression scale, high scores indicate more depressive symptoms. For the Received Social Support and Satisfaction scale, high scores indicate higher perceived support.

item-to-total-score correlation ranged from 0.55–0.74 for factor 1, 0.36–0.56 for factor 2, and 0.48–0.52 for factor 3.

Discussion

The aim of this study was to present a psychometric analysis of the SNI in informal caregivers of patients with cancer in hospice home care. Four hypotheses were tested: H_1 was not supported; H_2 was supported; H_3 was not supported when the caregiver data resulted in a three-factor solution; and H_4 was supported, as the SNI continues to show relatively strong internal consistency.

Sample

The sample in this study is comparable with other national data, which report that the average caregiver is likely to be female and related to and younger than the person that they are caring for, but likely to be aged 65 years or older themselves (McMillan et al., 2006; National Family Caregivers Association, 2010; Northouse, 2005). The homogeneity with national data supports the generalizability of the current study's findings to other hospice caregiver populations, but also highlights a limitation. Hospice caregivers are not reflective of the general caregiving population, which is reported to typically involve an adult daughter caring for an elderly noncustodial mother while still employed (National Family Caregivers Association, 2010). The one interesting difference in the current sample, however, is that participants reported fewer depressive

symptoms than other groups of caregivers (Fleming et al., 2006).

Comparing this group of participants with the sample from the original patient psychometric work shows that it also is comparable. In the original analysis, the average patient also was primarily female, Caucasian, Christian, private home dwelling, and with basic needs perceived as met (Hermann, 2006).

For that reason, one would expect the current study's findings to be closely associated.

Validity

Berry (2005), in a review of methodologic difficulties in the study of spirituality and religiosity, recommended focusing on conceptual clarity, rigorous study design, and appropriate data analysis. The current study sought to advance the rigor in the study of spiritual needs in caregivers of hospice homecare patients by analyzing an instrument with potential use in this population. The SNI initially was developed and validated in a patient population (Hermann, 2006). Based on the dyadic perspective acknowledged in end-of-life research (Bambauer et al., 2006; Sherman, 1998), the authors

Table 3. Spiritual Needs Inventory Items by Factor With Factor Loadings, Communalities, and Patient Subscale Placement

Factor	Factor Loadings	Communalities	Patient Subscale Placement
Factor 1. Religious needs^a			
Read a religious text.	0.73	0.65	Inspiration
Use phrases from a religious text.	0.73	0.63	Spiritual activities
Talk with someone about spiritual issues.	0.76	0.61	Inspiration
Use inspirational materials.	0.64	0.5	Spiritual activities
Read inspirational materials.	0.66	0.5	Spiritual activities
Go to religious services.	0.63	0.46	Religion
Sing or listen to inspirational music.	0.54	0.36	Inspiration
Be with people who share my spiritual beliefs.	0.66	0.44	Inspiration
Pray.	0.63	0.41	Religion
Factor 2. Outlook needs^b			
Think happy thoughts.	0.34	0.51	Outlook
Laugh.	0.36	0.39	Outlook
See smiles of others.	0.45	0.45	Outlook
Talk about day-to-day things.	0.36	0.29	Outlook
Be with friends.	0.32	0.23	Community
Factor 3. Community needs^c			
Be around children (own or others).	–0.43	0.46	Outlook
Be with family.	–0.26	0.41	Community
Have information about family and friends.	–0.25	0.41	Community

^a Eigenvalue = 6; Cronbach α = 0.89

^b Eigenvalue = 2.09; Cronbach α = 0.71

^c Eigenvalue = 1.23; Cronbach α = 0.68

hypothesized that an instrument developed for use in patients might also be valid and reliable in measuring the same construct in caregivers. The SNI did correlate in the direction hypothesized with depressive symptoms and social support, but only achieved significance with the social support. The lack of significance in the correlation with depressive symptoms may be from the lower reports of those symptoms in this particular sample.

During the factor analysis, the three factors found in the original sample that were more overtly religious collapsed into one factor, whereas the more existentially oriented factors, outlook and community, remained relatively the same. The items "be around children (own or others)" factored originally on outlook and in this study factored on community, and "be with friends" factored originally on community and in this study factored on outlook. That difference in overall factoring may be a function of the particular sample, 86% of which reported themselves as some type of Christian; however, it may reflect of a lack of conceptual clarity in the current understanding of spirituality (Pesut, Fowler, Taylor, Reimer-Kirkham, & Sawatzky, 2008). A study using this instrument in a comparable patient population showed a similar factor solution and that the error terms for the two subscales, outlook and community, correlated when analyzed using structural equation modeling. In additional analyses, the R^2 between the latent variable, spiritual needs, and the two subscales, outlook and community, were small. Those findings suggest that the more existential subscales of the SNI may be influenced by a latent variable that is more psychosocially rather than spiritually oriented (Buck, Overcash, & McMillan, 2009).

Hermann (2006) had reported in the original psychometric study that all communalities were greater than 0.5; the item-to-total correlations ranged from 0.39–0.67, with a five-factor solution explaining about 64% of the variance in the patient sample. In the current study, the communalities ranged from 0.23–0.65, with the majority in the 0.4–0.5 range. The item-to-total correlations ranged from 0.33–0.72. The three-factor solution explained only about 55% of the variance for the caregivers. That may

Table 4. Inter-Item Correlations

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	1																
2	0.22**	1															
3	0.47**	0.12*	1														
4	0.16**	0.24**	0.26**	1													
5	0.1*	0.29**	0.15**	0.36**	1												
6	0.47**	0.22**	0.58**	0.3*	0.26**	1											
7	0.14**	0.26**	0.24**	0.4**	0.29**	0.32**	1										
8	0.47**	0.2**	0.58**	0.19**	0.13**	0.55**	0.26**	1									
9	0.41**	0.18**	0.53**	0.16**	0.11*	0.53**	0.22**	0.55**	1								
10	0.09	0.12*	0.19**	0.45**	0.17**	0.23**	0.42**	0.14**	0.11*	1							
11	0.36**	0.19**	0.47**	0.24**	0.24**	0.54**	0.3**	0.42**	0.39**	0.26**	1						
12	0.32**	0.21**	0.48**	0.25**	0.15**	0.48**	0.35**	0.38**	0.43**	0.27**	0.4**	1					
13	0.35**	0.12*	0.52**	0.23**	0.22**	0.54**	0.21**	0.46**	0.39**	0.13**	0.54**	0.47**	1				
14	0.23**	0.44**	0.23**	0.23**	0.29**	0.29**	0.22**	0.26**	0.26**	0.17**	0.28**	0.26**	0.2**	1			
15	0.09	0.26**	0.17**	0.26**	0.2**	0.22**	0.34**	0.22**	0.17**	0.31**	0.25**	0.25**	0.17**	0.36**	1		
16	0.17**	0.38**	0.16**	0.33**	0.3**	0.29**	0.29**	0.22**	0.2**	0.25**	0.26**	0.28**	0.15**	0.46**	0.38**	1	
17	0.44**	0.18**	0.69**	0.23**	0.16**	0.58**	0.25**	0.47**	0.6**	0.18**	0.51**	0.5**	0.51**	0.25**	0.19**	0.22**	1

* Correlation is significant at the 0.05 level (two-tailed).

** Correlation is significant at the 0.01 level (two-tailed).

Note. Item 1—sing or listen to inspirational music; item 2—laugh; item 3—read a religious text; item 4—be with family; item 5—be with friends; item 6—talk with someone about spiritual issues; item 7—have information about family and friends; item 8—read inspirational materials; item 9—use inspirational materials; item 10—be around children (own or others); item 11—be with people who share my spiritual beliefs; item 12—pray; item 13—go to religious services; item 14—think happy thoughts; item 15—talk about day-to-day things; item 16—see smiles of others; item 17—use phrases from religious texts

Table 5. Descriptive Statistics by Item for the Spiritual Needs Inventory

Factor	$\bar{X}$	SD	Skew	Kurtosis
Factor 1				
Read a religious text.	2.54	1.49	0.48	-1.2
Use phrases from a religious text.	2.64	1.55	0.35	-1.39
Talk with someone about spiritual issues.	2.67	1.38	0.25	-1.14
Use inspirational materials.	2.73	1.53	0.22	-1.42
Read inspirational materials.	2.71	1.47	0.22	-1.35
Go to religious services.	2.79	1.64	0.2	-1.59
Sing or listen to inspirational music.	2.81	1.39	0.04	-1.23
Be with people who share my spiritual beliefs.	2.9	1.5	0.06	-1.42
Pray.	4.09	1.32	-1.27	0.3
Factor 2				
Think happy thoughts.	4.22	0.95	-1.33	1.94
Laugh.	4.09	0.97	-1.02	0.85
See smiles of others.	4.37	0.88	-1.57	2.59
Talk about day-to-day things.	4.05	1.06	-1.19	1.16
Be with friends.	3.7	1.14	-0.61	-0.92
Factor 3				
Be around children (own or others).	3.65	1.3	-0.58	-0.76
Be with family.	4.15	1.03	-1.2	1.09
Have information about family and friends.	4.07	1.12	-1.19	0.69

point to the need for different items to measure spiritual needs in a caregiver population, as opposed to a patient population, or may reflect only the uniqueness of this sample. Although the items in the SNI also are found in the literature for spiritual needs expressed by caregivers, the wording of some of the items may not have been correctly understood by the caregivers.

Item Analysis

Item analysis of the 17 items of the SNI in this study showed that inter-item correlations ranged from 0.1–0.7 and the item-to-total-score correlation ranged from 0.55–0.74 for factor 1, 0.36–0.56 for factor 2, and 0.48–0.52 for factor 3. Descriptive statistics and inter-item correlations were not found in the original study, but the item-to-total-score correlations were within the same range. That makes comparison on an item level between the two studies difficult. Because factor analysis and Cronbach alpha are based on analysis of correlation matrices, an inclusion of the inter-item correlation is recommended in future studies.

Reliability

Reliability is a reflection of how consistently or dependably an instrument measures what it purports to measure. In addition, the reliability of an instrument makes it possible for research results to be replicated (Polit & Hungler, 1983). The reliability of the SNI for the patient population was reported as 0.85, with the subscale alphas reported as ranging from 0.62–0.78 (Hermann, 2006). The caregiver sample in this study showed a Cronbach alpha of 0.88, with subscale alphas

ranging from 0.68–0.89. These are acceptably strong findings for a 17-item scale. Although ongoing discussion exists related to the limitations of alpha in cross-sectional data (Sijtsma, 2009), it remains the most widely used measure of reliability at this time. Although the validity analysis shows differences between the patient and caregiver samples, the SNI appears to reliably measure spiritual needs in both populations.

Limitations

As with any study, some limitations exist. First, the original patient sample and the current caregiver sample were primarily Caucasian, Christian, and spousal. The authors still do not know how valid the SNI would be in other populations. In the United States'

multicultural society, additional testing of the SNI is needed in samples from more diverse racial, ethnic, and religious populations. Second, although the SNI provides total scores that reflect spiritual needs, it should be noted that it provides a measure of unmet needs as well. The scores for the unmet needs aspect of the SNI were not included in this analysis. However, some consideration of the unmet needs seems warranted. Although spiritual needs are thought to be present all the time, "unmet needs" suggests a problem or deficit of some kind. In fact, one might make the argument that spiritual needs are a trait, whereas unmet needs are a state. Although demonstrating that was not the goal of this article, it should be noted as a limitation of the study. That limitation may be reflected in the authors' failure to find a significant correlation between needs (the trait) and depression (a state). Perhaps if the focus of the article had been unmet needs, the hypothesized relationship would have been found.

Conclusion

The SNI has been presented as an instrument developed to measure the spiritual needs of patients near end of life. The authors theorized that a spiritual needs instrument developed for patients may also be found valid and reliable when used with informal caregivers. The positive correlation with social support provided evidence for the construct validity of the scale. Although differences were found in the factor analysis, the overall structure appears to be retained providing

further evidence of validity. The SNI was also shown to meet the criteria for reliability in this population.

Implications for Nursing

The systematic measurement of spirituality and the spiritual needs of caregivers with validated instruments is not always part of the assessment process in the end-of-life population despite the recommendations of the National Consensus Project for Quality Palliative Care. No other instruments were found that measured spiritual needs in hospice caregivers when a search was conducted of the literature. Use of the SNI with informal hospice caregivers may aid in the identification of spiritual needs in cancer caregivers,

enabling the nurse to develop and provide spiritual care that is individualized and supportive of quality end of life care.

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