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The Factor Structure of the Daily Spiritual Experiences Scale: Exploring the Role of Theistic and Nontheistic Approaches at the End of Life

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The Daily Spiritual Experiences Scale (DSES; Underwood & Teresi, 2002) has made a distinctive contribution to the measurement of spirituality. However, the factor structure of the DSES has not been analyzed thoroughly and the instrument has not been administered to persons at the end of life (EOL). Thus, this study examined the dimensionality of the DSES using both exploratory and confirmatory factor analysis and examined the unique impact of different types of spiritual experiences on several EOL outcomes. In 2 samples—one comprised of patients receiving hospice care ($n = 153$) and a second of health care professionals working in EOL contexts ($n = 148$)—DSES items consistently loaded according to theistic and nontheistic experiences of spirituality. In addition, when controlling for the effects of religious affiliation and intrinsic religiousness, hospice patients' responses on the theistic and nontheistic factors were differentially predictive of their attitudes toward death and psychological well-being. While other results were not entirely dismissive of a 1-factor solution for the instrument, the combined evidence of this investigation indicates that a failure to appreciate the role of theism could lead clinicians and researchers to overlook centrally defining aspects of the spiritual experiences of many people at the EOL.

Keywords: spirituality, religion, death and dying, death anxiety, end of life

The possible health benefits of religion and spirituality have gained increasing appreciation in the behavioral sciences over recent decades. In their critical analysis of over 1,200 studies and 400 reviews on the relation between religion and spirituality and numerous physical and mental health conditions, Koenig, McCullough, and Larson (2001) concluded that religious and spiritual practices were consistently linked with positive functioning in response to life's chal-

lenges. Research has further revealed a trend toward heightened spiritual interest over the life span (e.g., Idler et al., 2003), and that seriously ill persons often cope with emotional distress associated with worsening health by drawing upon religious and spiritual experiences (Koenig, George, & Titus, 2004b; Koenig, George, Titus, & Meador, 2004a). In general, it appears that religion and spirituality can help people in their adjustment to life-threatening illness by evoking comforting emotions, offering strength, facilitating meaning making and acceptance of the condition, and reducing feelings of self-blame (Siegel & Schrimshaw, 2002). Although the role of these constructs has not been examined extensively in end of life (EOL) contexts with persons for whom death has become a salient concern, research has shown that spirituality might in fact increase one's ability to cope with concerns about mortality as well (Bivens, Neimeyer, Kirchberg, & Moore, 1994; Ita, 1995; Neimeyer, Currier, Coleman, Tomer & Samuel, 2011).

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Whether with individuals at the EOL or otherwise, conceptual and operational issues historically have made the constructs of religion and spirituality difficult to measure (Hill & Pargament, 2003; Kapuscinski & Masters, 2010; Koenig, 2008). In part to overcome these obstacles, the terms “religiousness” and “spirituality” have been differentiated in the literature. In contrast to “religiousness,” which connotes specific behavioral, doctrinal, and institutional features, the term “spirituality” has come to represent an individual’s subjective experiences in attempting to understand life’s ultimate questions and find meaning and purpose in living (Fetzer Institute/National Institute on Aging [NIA] Working Group, 1999). As such, someone may be pursuing a spiritually oriented life without adhering to a particular religious group or even affirming the existence of God or another transcendent being.

Notwithstanding the possible utility of this dichotomy, the interplay between religiousness and spirituality remains ambiguous, and conceptual inconsistency still arises as researchers attempt to assess these constructs (Hill & Pargament, 2003; Kapuscinski & Masters, 2010). On the one hand, omitting theistic references to God in spirituality measures reduces applicability to people who affiliate with formal religious systems and institutions that hold to a God concept. Conversely, individuals who value spirituality but are unaffiliated with a religious tradition or who espouse a more secular belief system might find such language uncomfortable, hence reducing external validity for this subset of people. Considering the strong beliefs that one can derive from religious and spiritual teachings about death, exploring the nature of different approaches to spirituality may have special relevance for persons at the EOL. In particular, researchers and clinicians might overlook crucial dimensions of the spirituality of persons at the EOL without appreciating fundamental differences in beliefs about theism. To this end, the goals of this study were (a) to evaluate the factor structure of a promising measure of spiritual experiences with two different samples and (b) to examine concurrent associations between the frequency of these experiences and a number of relevant outcomes for persons in the final stage of the dying process.

In a recent collaboration between the Fetzer Institute and the NIA to improve measurement of religious and spiritual factors in health research (Fetzer Institute/NIA Working Group, 1999; Idler et al., 2003), Underwood developed the Daily Spiritual Experiences Scale (DSES; Underwood, 2006; Underwood & Teresi, 2002). The DSES was designed to assess an individual’s perceptions of the transcendent in daily life and his or her perception of interacting with the transcendent. In contrast to rare and intense mystical experiences, the DSES attempts to capture dimensions of ordinary and day-to-day lived experiences of spirituality. By focusing on lived experiences rather than beliefs or behaviors per se, the DSES was constructed in a manner that could enhance its relevance for people with both theistic and nontheistic worldviews. In fact, half of the items on the scale reference God or the divine, while the other items exclude God-terminology and do not assume a theistic belief system. The full instrument includes 16 items inquiring about the daily frequency of lived experiences of closeness to God or the divine or a sense of connectedness, joy, transcendence, strength and comfort, peace, divine help and guidance, gratitude, and compassionate love.

The DSES has gained popularity in a variety of research contexts since its development (Underwood, 2006). According to a recent PsycINFO search, Underwood and Teresi’s (2002) seminal article was cited 134 times and researchers had incorporated the 6- or 16-item version of the DSES in over 70 empirical investigations. The DSES has been used to study the effects of spirituality among recovering drug/alcohol abusers (Laudet, Morgen, & White, 2006; Zemore & Kastukas, 2004), domestic violence survivors (Fowler & Hill, 2004), individuals in physical rehabilitation (Johnstone & Yoon, 2009; Ng, Fong, Tsui, Ah-Yeung, & Law, 2009), EOL health care professionals (Holland & Neimeyer, 2005), caregivers of HIV-infected children (Richards, Wrubel, Grant, & Folkman, 2000), chronically ill persons (Boswell, Kahana, & Dilworth-Anderson, 2006; Kohls, Walach, & Lewith, 2009), medically hospitalized older patients (Koenig et al., 2004a, 2004b), and sufferers of a number of health conditions, such as rheumatoid arthritis (Keefe et al., 2001), migraine headaches (Wachholtz & Pargament, 2005), hypertension

(Fitchett & Powell, 2009), and cancer (Cole, Hopkins, Tisak, Steel, & Carr, 2008).

While the measure has not yet been applied with an EOL sample (to our knowledge), DSES scores of aging persons have been shown to correlate with a number of important outcomes. For instance, studying a sample of over 800 older adults who were admitted to a general medical service, Koenig and colleagues (2004a, 2004b) found patients who indicated greater frequencies of daily spiritual experiences had better social support, cognitive function, cooperation with medical staff, and less depression and need for long-term care. In another group of over 200 older persons dealing with a chronic illness (Boswell et al., 2006), DSES scores were highly linked with reports of psychological well-being. Similarly, studies with healthier community samples of older adults have also revealed positive associations between everyday experiences of spirituality (as assessed by the DSES) and general emotional health (Ellison & Fan, 2008; Kalkstein & Tower, 2009).

Despite the growing popularity and apparent usefulness of the DSES, the factor structure of the instrument has not been thoroughly examined. In Underwood and Teresi's (2002) initial validation study, results of an exploratory factor analysis (EFA) with a diverse group of women suggested a single higher-order factor. In keeping with these results, EFAs conducted by Ng et al. (2009) and Kalkstein and Tower (2009) both yielded evidence of a unidimensional factor structure for the DSES in their respective samples. However, as Underwood (2006) suggests in her directions for interpreting the DSES, there has also been some suggestion that the items may cluster with certain populations based on assumptions of theism. For instance, Kalkstein and Tower (2009) found that the items assessing theistic approaches to spirituality consistently loaded more highly on the primary factor in their EFA than those that did not reference God. Zemore and Kaskutas (2004) also found support for a two-factor model; studying a sample of recovering substance abusers, results of an EFA followed by confirmatory factor analysis (CFA) revealed that DSES scores systematically clustered according to whether the items explicitly assessed theistic experiences of spirituality.

As a further indication of the possible helpfulness of distinguishing between theistic and

nontheistic experiences on the DSES, other empirical results have suggested that these approaches may differentially predict clinical outcomes for certain subgroups of persons. Zemore and Kaskutas (2004) found that factors linked with recovery in the philosophy of Alcoholics Anonymous were associated with theistic spiritual experiences but the nontheistic items failed to predict these same outcomes. In contrast, theistic spiritual experiences were unrelated to community helping in the sample, whereas nontheistic approaches had a positive correlation with this particular outcome. Ellison and Fan (2008) also parsed the DSES into theistic and nontheistic subscales, but based on theoretical grounds. When controlling for a number of factors, results of their study indicated that nontheistic items predicted emotional well-being among persons who participated in the 1998 and 2004 General Social Surveys. However, when controlling for other study variables, the theistically oriented items on the DSES failed to yield a unique link with the outcomes in Ellison and Fan's (2008) investigation.

Given these differing results for the DSES, combined with the centrality of religion among many persons at the EOL, the present study had two goals. First, we examined the factor structure of the DSES with a sample of persons receiving hospice care. We initially conducted an EFA and then used CFA to compare the models generated with the hospice patients with a group of health care workers who were routinely exposed to issues of death and dying in their professional roles. In view of the religiousness of aging Americans in general (Idler et al., 2003), it was hypothesized that individuals in the final weeks and months of life would endorse a range of theistic and/or nontheistic spiritual experiences. If a multifactor model seemed to better fit the data across the two samples, the second goal of the study was to explore whether the frequency of different types of spiritual experiences were associated with religious affiliation, intrinsic religiousness, attitudes toward death, and psychological well-being among the hospice patients. Ultimately, it was our hope that the current study might provide helpful information on the factor structure of the DSES in general, while also addressing specific questions about whether different approaches to spirituality might uniquely bear on patterns of

psychological and spiritual adjustment for people at the EOL.

Method

Participants

Following institutional approval of the project by the Fetzer Institute and the Methodist Health Care Institutional Review Boards, eligible families enrolled in the Methodist Alliance Hospice program were contacted by telephone or in person by the clinical social work staff. Eligibility for participating in the study was determined at weekly staffing meetings with the patient's interdisciplinary team. Interested patients were enrolled if they met criteria for admission to the hospice service as an adult patient (18 years or older), with a prognosis of at least 3 weeks but not more than 6 months to live, and had the necessary cognitive function and language skills to communicate in an oral interview. Of the patients deemed appropriate to take part in the study, 153 persons consented to do so. The average age in this hospice sample was 73.79 years ($SD = 12.28$) and there was nearly an even number of men (46%) and women (54%). Consistent with the predominantly biethnic region where the study was conducted, 65% of the sample identified as being Caucasian and 35% were African American persons. In terms of religious affiliation, the majority of patients described themselves as being Protestant (71%), while a few were Roman Catholic (7%). The remainder of the sample professed no religious affiliation at the time of the study (22%).

In addition to the sample of hospice patients, a second sample of 149 individuals were invited to participate in another study on the role of spirituality at presentations on bereavement and death and dying for health care workers (given by Neimeyer). Following informed consent procedures, these participants were distributed the DSES and several other measures during breaks in the workshops with research assistants available to answer questions. Please refer to Holland and Neimeyer (2005) for additional information about the procedures of this study. The average age in this second sample was 47.02 years ($SD = 12.12$) and was largely comprised of women (81%). The majority of these participants were Caucasian (86%), though African

American persons (9%) and individuals from other ethnicities (5%) were represented as well. This second group was also largely comprised of Christian Protestant (47%) and Roman Catholic (18%) individuals or persons who espoused no religious affiliation (21%). However, in contrast to the hospice sample, there were small percentages of persons in this second sample who identified as Buddhist (5%), Unitarian (5%), Jewish (3%), and Muslim (1%). Nearly a third of these participants (30.6%) reported working as nurses, 18.4% as chaplains, 15% as social workers, 8.2% as psychologists, 6.8% as master's-level therapists, and the remainder indicated working in other fields. Over half (55%) had attained a master's degree or higher in their health-related discipline and the mean number of years experience in their EOL occupation was 12.9 ($SD = 8.1$).

Measures

Daily spiritual experiences. The full 16-item version of the DSES (Underwood & Teresi, 2002) was used to assess experiences of the transcendent in daily life in both samples. Fifteen items were rated on a 6-point scale (*Never* = 1, *Many Times* = 6), such that higher scores indicated greater frequency of daily spiritual experiences. One of the items ("In general, how close do you feel to God?") was scored on a four-point scale, with anchor points of *Not at all close* = 1 and *As close as possible* = 4.

Intrinsic religiousness. Intrinsic religiousness was assessed among the hospice patients using three items from Genia's (1993) revision of the Religious Orientation Scale (Allport & Ross, 1967; e.g., "My religious beliefs are what really lie behind my whole approach to life"). So as to reduce burden, we only focused on items that gauge the extent to which an individual has internalized religion as a master motive in life as opposed to considering it an instrumental means to other ends (i.e., extrinsic religiousness). Patients' responses were based on a 7-point scale for the questions (*Strongly disagree* = 1, *Strongly agree* = 7). This subscale has shown applicability to both Christian and non-Christian faiths and demonstrated excellent internal consistency in this sample as well ($\alpha = .94$).

Death attitudes. The Death Attitude Profile-Revised (DAP-R; Wong, Reker, & Gesser,

1994) was used to assess patients' attitudes toward death and dying in the hospice sample. In keeping with a contemporary emphasis on the multidimensionality of death attitudes (Neimeyer, Moser, & Wittkowski, 2003), the DAP-R consists of several subscales, including the Fear of Death (e.g., "The prospect of my own death arouses anxiety in me") and Death Avoidance (e.g., "Whenever the thought of death enters my mind I try to push it away"). Other subscales assess positive attitudes toward death, including Approach Acceptance (e.g., "I look forward to a reunion with my loved ones when I die") and Escape Acceptance (e.g., "I view death as a relief from earthly suffering"). Psychometric properties of the DAP-R have been shown to be favorable, with test-retest reliabilities in the range of .61 to .95 over a 1-month period and correlations with other assessments of death attitudes (Wong et al., 1994). The current study included three-item assessments of these four types of death attitudes and responses were again based on a 7-point scale (*Strongly disagree* = 1, *Strongly agree* = 7). Internal consistencies for these subscales were as follows: Fear of Death = .84, Death Avoidance = .87, Approach Acceptance = .92, and Escape Acceptance = .88.

Psychological well-being. Psychological well-being was assessed by the psychological domain subscale from the World Health Organization's Quality of Life Scale (WHOQOL; WHOQOL Group, 1998) and items from Rosenberg's Self-Esteem Scale (RSE; Rosenberg, 1965). The WHOQOL has demonstrated good internal consistency and validity in distinguishing depressed and nondepressed individuals (WHOQOL Group, 1998; Power, Harper, Bullinger, & WHOQOL Group, 1999; Skevington & Wright, 2001), as well as patients suffering a variety of physical illnesses (Darikarnon, 1998; Pibernik-Okanovic, Szabo, & Metelko, 1998; Skevington, 1998). We used three items for this study with responses again based on a 7-point scale (*Not at all* = 1, *An extreme amount* = 7): "How much do you experience positive emotions in your life?"; "How well are you able to concentrate?"; and "How much do feelings of sadness or depression interfere with your everyday functioning?" The RSE is a widely used and well-established self-report instrument. The three items from the RSE included in this study were also based on a 7-point

scale (*Strongly disagree* = 1, *Strongly agree* = 7): "On the whole, I am satisfied with myself"; "I feel that I have a number of good qualities"; and "I feel that I am a person of worth." Internal consistency for this psychological well-being measure was .86 among the hospice patients.

Results

Exploratory Factor Analysis

As a first step, one-, two-, and three-factor models were fitted to the DSES data for the hospice patients and compared to identify the best model. The overall fit of each model was determined using the comparative fit index (CFI), the Tucker-Lewis index (TLI), and the root mean square error of approximation (RMSEA). A value of .95 or greater was used to reflect good model fit for the CFI and TLI (Hu & Bentler, 1999; Raykov & Marcoulides, 2006). Values of less than .05 and .08 reflect a close and a reasonable fit to the data for RMSEA (Marsh, Hau, & Wen, 2004). The use of CFI, TLI, and RMSEA in this study reflects that EFA is a special case of structural equation modeling (SEM), and many of the fit indices developed for SEM also can be utilized for EFA (Fabrigar, Wegener, MacCallum, & Strahan, 1999).

In this initial EFA, multiple criteria were used to determine the number of factors in the model, given that there is no single criterion that adequately determines the optimal number of factors (Gorsuch, 2003; Hayashi, Bentler, & Yuan, 2007). We primarily relied on an oblique rotation criterion of Oblimin ($k = 0$) in the EFA (Muthén & Muthén, 1998–2010). However, given the fact that different rotation criteria can produce different results, we used a multiple factor pattern matrix based on different rotation criteria (Sass & Schmitt, 2010). Thus, Yates's Geomin and CF-Facparsim were also considered (Muthén & Muthén, 1998–2010), and the factor pattern matrices from these three different rotation criteria were compared.

The significance of all factor loadings in each factor model was investigated using estimates of standard errors for those loadings, as specified in Cudeck and O'Dell (1994). To control the probability of a Type I error in the significance tests in this study, a Bonferroni correction was applied to the alpha level of .05. The Bon-

ferroni correction factor, d , was calculated using the following formula: $d = pm - m(m - 1)/2$, where p represents the number of factor indicators and m the number of factors. The adjusted alpha level was set at α/d . For example, for the two-factor model, $p = 16$ (i.e., 16 items) and $m = 2$ (i.e., two factors) and the correction factor, d , is 31. Hence, the Bonferroni corrected alpha for the factor loadings in the two-factor model was set at .001613 (i.e., .05/31), which corresponds to a z score of 2.95.

As a final preliminary step for conducting the EFA, the 16 DSES items' skewness statistics were divided by the standard errors, with those values larger than 2 or smaller than -2 being regarded as extremes (Garson, 2011). These results ranged from -1.96 to -11.27 ($M = -6.57$; $SD = 2.18$), indicating significant skewness in item responses among the hospice patients. Thus, item responses were treated as categorical rather than continuous for the remainder of the factor analyses in the hospice sample.

EFA models were derived in Mplus on the basis of the weighted least square parameter estimates and a diagonal weight matrix with

standard errors and a mean- and variance-adjusted chi-square test statistic (WLSMV; Muthén & Muthén, 1998–2010). Results suggested a dominant factor for hospice patients' responses on the DSES with an eigenvalue of 9.78, explaining 61.1% of the total variance. However, there was evidence of a second factor with an eigenvalue that was also greater than 1.

The factor structures and loadings were next compared across outputs from Oblimin, Geomin, and Facparsim rotation criteria to determine whether a specific rotation criterion affected the factor structure in a unique way. For each criterion, one-, two-, and three-factor solutions were fitted for patients' DSES responses. The factor structure and loadings were similar between Oblimin and Geomin, but there was a marked difference between the results for these two methods (which minimize the row complexity) and the Facparsim rotation criterion (which maximizes the column complexity). Nevertheless, there was no marked difference in the general factor structure and the comparative size of factor loadings between the three rotation criteria. Please see Table 1 for the factor

Table 1
Exploratory Factor Analysis: Factor Loadings and Interfactor Correlations

Item	1 factor	2 factor		3 factor		
	1	1	2	1	2	3
1. I feel God's presence.	.74	.21	.59	.83	-.03	-.25
2. I experience a connection to all of life.	.58	.69	-.10	.02	.59	-.13
3. During worship, or at other times when connecting with God, I feel joy which lifts me out of my daily concerns.	.77	.25	.58	.68	.14	-.05
4. I find strength in my religion or spirituality.	.90	.75	.19	.41	.54	-.23
5. I find comfort in my religion or spirituality.	.88	.92	-.01	.21	.72	-.27
6. I feel deep inner peace or harmony.	.85	.79	.11	.23	.69	-.11
7. I ask for God's help in the midst of daily activities.	.85	-.04	.94	.88	.01	.19
8. I feel guided by God in the midst of daily activities.	.91	.10	.87	.86	.10	.09
9. I feel God's love for me, directly.	.86	.25	.67	.71	.21	.03
10. I feel God's love for me, through others.	.82	.74	.12	.21	.66	-.07
11. I am spiritually touched by the beauty of creation.	.75	.88	-.13	-.05	.84	-.02
12. I feel thankful for my blessings.	.85	.72	.17	.25	.66	-.04
13. I feel a selfless caring for others.	.80	.75	.08	.03	.82	.19
14. I accept others even when they do things I think are wrong.	.69	.79	-.07	-.17	.90	.21
15. I desire to be closer to God or in union with the divine.	.39	-.20	.63	.35	.07	.68
16. In general, how close do you feel to God?	.61	-.07	.73	.59	.06	.27
Factors	Interfactor correlations					
1	—	—	—	—	—	—
2		.79	—	.75	—	—
3				.01	.03	—

Note. Statistically significant factor loadings and interfactor correlations are in bold.

loadings, associated standard deviations, and interfactor correlations from the Oblimin criterion.

The Bonferroni correction factors for one-, two-, and three-factor models were calculated as 16, 31, and 45, respectively. Corrected alphas for the loadings in the one-, two-, and three-factor models were therefore set at .003125 (i.e., .05/16), .001613 (i.e., .05/31), and .001111 (i.e., .05/45), which corresponds to *z* score values of 2.73, 2.95, and 3.06. In general, these results suggested that the two-factor model best fit the hospice data on the basis of information from the fit indices, factor structure, and item contents (see Table 2). The one-factor model showed a relatively reasonable fit, but the RMSEA was considerably larger than the recommended cut-off. Although the RMSEA only suggested a moderately reasonable fit in the two-factor model, the factor structure and the items under each factor demonstrated a clearly interpretable pattern regarding the types of spiritual experiences reported by the hospice patients. The first factor (9 items), dubbed the Nontheistic factor, includes items that primarily measure spiritual connection with other people and nature (i.e., experiences of spirituality that do not necessarily involve assumptions about God or the existence of a transcendent being). In contrast, the second factor (7 items), heretofore referred to as the Theistic factor, consists of items that more directly assess one's sense of connection with God.

In spite of good fit to the data, the three-factor model did not provide additional useful information from a theoretical standpoint. For example, the second factor in the three-factor model was almost identical to the Nontheistic factor in the more parsimonious two-factor solution. In addition, the first and third factors in the three-factor model simply subdivided the Theistic factor from the two-factor solution into two

smaller components. Overall, this pattern suggests that an additional factor in the three-factor model failed to increase the incremental validity of the DSES in this study. Also, two items (i.e., Items 4 and 5) in the three-factor model generated significant cross-loadings across the second and third factors. All in all, drawing upon both these empirical results and theoretical reasoning, the two-factor model was selected to best represent the factor structure of daily spiritual experiences among the men and women in the hospice sample.

Confirmatory Factor Analysis

As a final step in examining the generalizability of the factor structure of the DSES, the tenability of the two-factor model was tested using CFA with a second sample, in this case consisting of EOL health care professionals. Values for the 16 DSES items' skewness statistics divided by their standard errors ranged from -5.67 to 0.03 ($M = -2.73$; $SD = 1.76$), which indicated significant skew in item responses for participants in this group as well. Thus, the item responses were again treated as ordered categorical rather than continuous in the analyses. CFA was conducted using the WLSMV estimation procedure in Mplus (Muthén & Muthén, 1998–2010). The fit indices employed for CFA models were identical to those used for the EFA models in the previous section.

The two CFA models generated with the hospice patients each provided a reasonable fit to the data from the EOL professionals (see Table 3). The fit indices were similar across one- and two-factor models. However, as suggested by the CFIs and TLIs, the two-factor CFA model provided a superior fit to the data in the health care sample. Factor loadings of the one-factor model ranged from .39 for Item 14 to .97 for Item 4 and all of them were statistically signif-

Table 2
Exploratory Factor Analysis: Fit Indexes for One-, Two-, and Three-Factor Models

Model	χ^2	<i>df</i>	CFI	TLI	RMSEA
One-factor	336.15*	104	.955	.948	.123
Two-factor	212.02*	89	.976	.968	.097
Three-factor	140.29*	75	.987	.980	.077

Note. CFI = comparative fit index; TLI = Tucker-Lewis Index; RMSEA = root mean square error of approximation.
* $p < .001$.

Table 3
Confirmatory Factor Analysis: Fit Indexes for One- and Two-Factor Models

Model	χ^2	df	CFI	TLI	RMSEA
One-factor	476.02*	104	.970	.965	.155
Two-factor	398.96*	103	.976	.972	.139

Note. CFI = comparative fit index; TLI = Tucker-Lewis Index; RMSEA = root mean square error of approximation.
 * $p < .001$.

icant, $ps < .001$. Loadings of Factor 1 (Nontheistic factor) in the two-factor model ranged from .40 for Item 14 to .97 for Items 4 and 5. Those of Factor 2 (Theistic factor) in the two-factor model ranged from .72 for Item 15 to .96 for Item 8. All factor loadings were statistically significant in this two-factor solution, $ps < .001$. Table 4 provides details about the factor loadings and factor structure of the CFA model. The interfactor correlation between Factors 1 and 2 was again statistically significant, $p < .001$, and higher ($r = .89$) than the association ($r = .79$) in the two-factor EFA model.

Examining Bivariate Relations Between DSES Factors and Other EOL Variables

In addition to examining the factor structure of the DSES, we explored the associations be-

tween DSES factors and EOL variables assessed in the study (see Table 5). Scores on the Theistic and Nontheistic factors of spirituality did not differ according to the ages of hospice patients. However, both theistic and nontheistic experiences were positively correlated with intrinsic religiousness, approach acceptance toward death, and psychological well-being. There was also a tendency for patients with more theistic experiences to engage in escape acceptance appraisals; however, other results did not yield a significant relation between nontheistic spirituality and this type of death-related acceptance.

Results of an independent samples t test indicated men and women did not differ in terms of theistic or nontheistic approaches to spirituality, $ps > .250$. In addition, scores on the

Table 4
Confirmatory Factor Analysis: Factor Loadings and Inter-Factor Correlations

Item	1 factor		2 factor	
	1		1	2
1. I feel God's presence.	.89		—	.91
2. I experience a connection to all of life.	.56		.58	—
3. During worship, or at other times when connecting with God, I feel joy which lifts me out of my daily concerns.	.85		—	.87
4. I find strength in my religion or spirituality.	.97		.97	—
5. I find comfort in my religion or spirituality.	.96		.97	—
6. I feel deep inner peace or harmony.	.70		.72	—
7. I ask for God's help in the midst of daily activities.	.94		—	.95
8. I feel guided by God in the midst of daily activities.	.95		—	.96
9. I feel God's love for me, directly.	.90		—	.92
10. I feel God's love for me, through others.	.88		.93	—
11. I am spiritually touched by the beauty of creation.	.64		.66	—
12. I feel thankful for my blessings.	.67		.69	—
13. I feel a selfless caring for others.	.55		.57	—
14. I accept others even when they do things I think are wrong.	.39		.40	—
15. I desire to be closer to God or in union with the divine.	.71		—	.72
16. In general, how close do you feel to God?	.82		—	.84
Interfactor correlation	—			.89

Note. All factor loadings and the interfactor correlation are statistically significant ($p < .001$) and, thus, were not highlighted.

Table 5
*Correlations Between Theistic and Nontheistic
 Spiritual Experiences and Continuous Study
 Variables*

Variable	Theistic	Nontheistic
Theistic	—	.89**
Age	.03	.05
Intrinsic Religiousness	.66**	.57**
Fear of Death	-.08	-.08
Approach Acceptance	.56**	.56**
Death Avoidance	-.09	-.11
Escape Acceptance	.21*	.11
Psychological Well-Being	.35**	.43**

* $p < .05$. ** $p < .01$.

Theistic factor did not vary on the basis of patients' ethnicity, $p = .839$. There was a tendency for Caucasians to report greater frequency of nontheistic experiences compared with their African American counterparts, $t(147) = 3.71, p = .057, d = 0.62$. Patients who reported some type of religious affiliation ($n = 108$) also reported a greater frequency of theistic experiences than the near quarter of the sample ($n = 31$) who did not report a religious affiliation, $t(147) = -2.43, p = .043, d = 0.40$. These differences in religious affiliation were not found for the patients' responses on the Nontheistic factor, $p = .920$.

Examining the Unique Role of Theistic/Nontheistic Experiences and EOL Adjustment

In the last set of analyses, we examined whether theistic or nontheistic approaches were uniquely associated with hospice patients' attitudes toward death and psychological well-being. In each regression analysis, religious affiliation and intrinsic religiousness were included in the model, since these variables were correlated with spiritual experiences in bivariate analyses and theoretically associated (or possibly confounded) with spirituality in general (Hill & Pargament, 2003; Kapuscinski & Masters, 2010; Koenig, 2008). Results of these analyses are outlined in Table 6.

For the first analysis, Fear of Death was regressed onto religious affiliation, intrinsic religiousness, and theistic/nontheistic spiritual experiences. The overall model was statistically significant, $F(4, 131) = 9.52, p < .001$, accounting for 23% of the variance. Of

the two types of spiritual experiences, engagement in theistic approaches was uniquely related with anxiety about dying in an unanticipated positive direction, $B = 0.07, SE B = 0.04, t = 2.03, p = .045$.^{1,2}

The dependent variable in the second analysis was Approach Acceptance about death. The overall model was again statistically significant, $F(4, 132) = 46.18, p < .001$, accounting for 58% of the variance. As presented in Table 6, nontheistic experiences were positively related to Approach Acceptance, $B = 0.04, SE B = 0.02, t = 2.34, p = .021$, above and beyond religious affiliation, intrinsic religiousness, and frequency of theistic-oriented spiritual experiences.

In the third analysis, the dependent variable was Death Avoidance. In contrast to the previous analyses, the overall model failed to achieve statistical significance, $R^2 = .06, F(4, 131) = 2.17, p = .076$. In addition, neither theistic nor nontheistic spiritual experiences were uniquely associated with patients' avoidance of the subject of death when controlling for religious affiliation and intrinsic religiousness (see Table 6).

The fourth regression analysis focused on Escape Acceptance. When viewed together, the four predictors accounted for a significant amount of the variance in this type of death acceptance, $R^2 = .08, F(4, 131) = 2.65, p = .036$. When controlling for patients' religious affiliation and intrinsic religiousness, both theistic and nontheistic experiences were marginally correlated with Escape Acceptance, $ps = .062$ and $.109$, respectively.

In the final analysis, we used psychological well-being as the dependent variable. As presented in Table 6, the predictors generated a significant explanatory model, $R^2 = .24, F(4, 130) = 10.44, p < .001$. In terms of the two

¹ We refer the interested reader to an earlier publication from this study for more in depth information on moderating factors in death attitudes for persons at the EOL (Neimeyer et al., 2011).

² For the sake of parsimony, we report results using a simultaneous regression procedure in testing the unique effects for theistic and nontheistic approaches to spirituality. All regression analyses were also performed in a hierarchical manner with theistic and/or nontheistic approaches added in a second step and the changes in the R^2 corresponded exactly with the statistically significant effects for the individual coefficients reported in this article.

Table 6
Religiousness and Theistic/Nontheistic Spiritual Experiences Predicting Death Attitudes and Psychological Well-Being

Predictor	Fear of Death			Approach Acceptance			Death Avoidance			Escape Acceptance			Psychological Well-Being		
	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β
Religious Affiliation	-1.92*	.36	.04	0.14	.19	.04	-0.86*	.44	-.17	-0.22	.45	-.05	0.18	.39	.04
Intrinsic Religiousness	-0.21	.13	-.17	0.58*	.07	.64	-0.24	.16	-.16	0.25	.16	.17	0.39*	.14	.28
Theistic Experiences	0.07*	.04	.28	-0.01	.02	-.03	0.05	.05	.18	0.08	.05	.29	-0.04	.04	-.14
Nontheistic Experiences	-0.04	.03	-.17	0.04*	.02	.22	-0.04	.04	-.14	-0.06	.04	-.22	0.10*	.03	.40

* $p < .05$.

types of daily spiritual experiences, nontheistic approaches were uniquely correlated with patients' emotional health, $B = 0.10$, $SE B = 0.03$, $t = 3.01$, $p = .003$, above and beyond religiousness affiliation, intrinsic religiousness, and theistic experiences of spirituality.

Discussion

The possible helpfulness of religion and spirituality in coping with life's stressors has gained much attention over the recent past (Fetzer Institute/NIA Working Group, 1999; Idler et al., 2003; Koenig et al., 2001). However, advances in empirical research have also given rise to serious questions about the appropriate conceptualization and measurement of these multifaceted constructs (Hill & Pargament, 2003; Kapuscinski & Masters, 2010; Koenig, 2008). As such, the goals of this study were (a) to examine the factor structure of the DSES (Underwood, 2006; Underwood & Teresi, 2002) with two different samples of persons negotiating EOL concerns and (b) to explore relations between different types of spiritual experiences, death attitudes, and psychological adjustment among the individuals receiving hospice care. Although the DSES has been used widely over the last decade, this is the first investigation to utilize the instrument with persons at the EOL, and only the second to evaluate the dimensionality of the DSES using CFA (see Zemore & Kaskutas, 2004 for results of the other CFA with substance abusers).

Factor analytic results across the two EOL samples converged with those of Zemore and Kastukas (2004) in supporting a two-factor solution differentiating between theistic and nontheistic experiences of spirituality. Factor load-

ings for the EFA conducted with the hospice sample were between .58 and .94 for the Theistic factor and .69 and .92 for the Nontheistic factor, suggesting that they each present viable indicators of related but distinct approaches to living out one's spirituality on an everyday basis. Factor loadings fell in a similar range for the EOL health care sample, with the exception of a single item that loaded at .40 on its factor ("I accept others even when they do things I think are wrong"). The other 15 items loaded between .57 and .97 on their respective factors. In keeping with the fit indices for the hospice sample, comparison of one- and two-factor models using CFA for the responses of health care professionals similarly revealed that the latter solution provided a superior fit to the data.

Given the possible usefulness of distinguishing between theistic and nontheistic approaches to spirituality, it could be anticipated that the two factors in the second model may correlate differently with other study variables. Scores for the Theistic and Nontheistic factors did not vary according to age or gender of the hospice patients. However, other results indicated that Caucasians engaged in a greater frequency of nontheistic experiences compared with African American patients—a pattern not found for the Theistic factor. In addition, patients who reported a formal religious affiliation were more likely to endorse theistic-oriented experiences, whereas nontheistic approaches were unrelated with this aspect of religiousness. Considering correlations with intrinsic religiousness, individuals with a greater internalized sense of religion engaged in both theistic and nontheistic approaches to greater degrees. The two types of daily spiritual experiences were also positively correlated with both psychological well-being

and approach acceptance in bivariate analyses, further suggesting the possible mental health benefits of religion and spirituality amid life's challenges (Koenig et al., 2001). Regarding other death attitudes, results indicated that persons with a greater frequency of theistic experiences were more likely to engage in escape avoidance appraisals about their impending death. In contrast, the frequency of nontheistic experiences was not shown to relate significantly with escape avoidance.

Notwithstanding the overlap between hospice patients' responses on the Theistic and Nontheistic factors, results of multivariate analyses further supported the distinctiveness of these two factors. When accounting for the effects of religious variables, the frequency of theistic experiences was uniquely related with patients' fears about death. Contrary to our hypotheses, when the effects of religious affiliation, intrinsic religiousness, and nontheistic experiences were controlled, patients who indicated a greater theistic spirituality were shown more likely to experience death anxiety. This relation was not found for scores on the Nontheistic factor, as this predictor was no longer related significantly to death anxiety once the effects of the other variables were accounted for in the analysis.

Although the correlational nature of this investigation limits our ability to draw causal inferences, these findings raise the possibility that fears about death may be linked with a special emphasis among many dying persons on pursuing divine help or guidance, acceptance, and a sense of connection with a being who may transcend the bounds of space and time (all assessed by the DSES). Another possible interpretation of the present findings is that the two religious variables accounting for an intrinsic dimension on the Theistic factor simply left a possible extrinsic dimension of theistic spirituality to correlate with anxiety about death. Given the strong association between extrinsic religiousness and anxiety in general, such a trend might shed light on the current results as well. Unfortunately, without the knowledge of patients' levels of death anxiety or engagement in theistic-oriented spirituality prior to the initiation of hospice, we can only speculate as to the nature of these relations in this particular sample.

Multivariate analyses revealed two unique effects that merit some discussion with respect

to nontheistic spirituality as well. First, there was a tendency for patients who engaged in nontheistic approaches to endorse greater approach acceptance about their death. Second, consistent with Ellison and Fan's (2008) results, nontheistic experiences were uniquely related with psychological well-being in the hospice sample, even when controlling for religious factors and scores on the Theistic factor. Overall, patients who engaged in a higher frequency of nontheistic approaches identified better emotional health, beyond the effects of religious affiliation, intrinsic religiousness, or engagement in theistic experiences. These findings suggest that items on the DSES that do not assume belief in God or the divine may in fact assess certain aspects of spiritual orientations that do not overlap with traditional religious frameworks and involvement for many persons. Given the contributions of nontheistic spirituality and intrinsic religiousness in predicting both approach acceptance and psychological well-being, coupled with the inability of scores on the Theistic factor to account for differences in outcomes in these analyses, items on the Nontheistic factor seemed to increase the incremental validity of the DSES in this sample beyond measures of religiousness and theistic spirituality.

Considering the theoretically meaningful manner in which the DSES items clustered according to assumptions about theism and the differential predictive power of the two factors in the multivariate analyses, it appears the DSES could ideally be interpreted as a bidimensional measurement tool. Nevertheless, other results from the EFA and CFA indicate that the DSES could be utilized as an assessment of a single higher-order construct as well. For instance, scores on the Theistic and Nontheistic factors were highly correlated. In addition, with the exception of RMSEA, fit indices from the EFA and CFA were not altogether dismissive of a one-factor solution for both of the study samples. In view of the usefulness of the DSES across prior studies, all but two of which treated spirituality as a unidimensional construct (Ellison & Fan, 2008; Zemore & Kaskutas, 2004), the present results suggest that the DSES can be interpreted as a unidimensional instrument in some instances. However, as Underwood (2006) has highlighted as well, the combined evidence from this study indicates that clini-

cians and researchers should be mindful of a potentially crucial distinction between theistic and nontheistic approaches to spirituality as they implement the DSES with specific populations.

Despite the study's strengths in recruiting two distinct samples and using CFA to examine the factor structure of the DSES, it is necessary to address several limitations. One concern that deserves highlighting here is that 80% of each sample endorsed a particular religious affiliation, the vast majority of which were affiliated with a variant of the Judeo-Christian tradition. In fact, all of the hospice patients who reported a religious affiliation were Christian, and 7 out of 8 identified themselves with a Protestant denomination, which may have limited variance in theistic approaches to spirituality. Also, while we included religious affiliation in the multivariate analyses as a way of accounting for the effects of this possible confound, the current results might generalize as well to dying persons in other geographic regions with fewer people who espouse a Judeo-Christian belief system. As reflected in Ng and colleagues' (2009) extension of the definition of God to embrace both a humanistic and philosophical higher power in their translation of the DSES into Chinese, assumptions of theism (or lack thereof) in the items used in this study would likely be addressed differently according to the cultural background of the respondent. Future research would do well to compare the two models generated in this study using CFA with different types of populations. In particular, examining the tenability of the one- versus two-factor solution with younger persons or with samples that reflect non-Western cultures and greater representations of nonreligious persons would be critical steps in this process.

We previously noted how the cross-sectional nature of the present design limits the ability to draw causal inferences between the frequency of spiritual experiences and the EOL outcomes assessed in the study. Given the correlations found between DSES scores and emotional well-being in this and other studies (Boswell et al., 2006; Ellison & Fan, 2008; Kalkstein & Tower, 2009; Koenig et al., 2004a, 2004b), questions arise as to whether spiritual experiences actually promote well-being or if in fact depressed individuals or persons suffering from other conditions are simply at a decreased like-

lihood of engaging in spirituality (Koenig, 2008). Without the benefit of longitudinal designs, clarifying these types of questions will not be possible.

Related measurement concerns involve reliance on self-report scales to assess correlates of the DSES factors and lack of attention to personality. While hospice patients completed study questionnaires with the aid of clinical social workers and other project staff, observational data and alternate sources of information would strengthen the conclusions that can be drawn from this investigation. So as to reduce burden in this study, we were also unable to control for several possible confounding variables. Given the complex relations between personality, religiousness/spirituality, and general life functioning (Piedmont, 1999; Saroglou & Munoz-Garcia, 2008), the effects of daily spiritual experiences (as assessed by the DSES) might have been confounded with participants' basic personalities. Hence, the incremental validity for the DSES in predicting EOL outcomes might not have achieved significance when controlling for different traits in the sample (e.g., neuroticism, extraversion; Kapuscinski & Masters, 2010). Looking ahead, future work should further examine the value of the DSES in predicting mental and physical health using more sophisticated designs and measurement strategies that can account for the role of personality factors as well.

In spite of these limitations, the present study offers additional support for the utility of the DSES and provides important evidence on the instrument's factor structure among persons in an EOL context and the role of theism in shaping attitudes toward death and dying. Consistent with Underwood's (2006) mission to develop an inclusive assessment of spirituality that could be interpreted in a number of ways, findings generally supported a two-factor solution involving theistic and nontheistic spiritual experiences for the two samples in this study. Although assumptions of theism might not factor prominently into all persons' responses on the DSES, findings indicate that a failure to appreciate differences across the DSES items could lead clinicians and researchers to overlook centrally defining aspects of the spiritual experiences of many people at the EOL and possibly in other contexts as well.

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