

A PSYCHOMETRIC EVALUATION OF THE  
*ASSESSMENT OF SPIRITUALITY AND RELIGIOUS SENTIMENTS*  
(ASPIRES) SCALE: SHORT FORM

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ABSTRACT

The purpose of this report was to examine the psychometric properties of the *Assessment of Spirituality and Religious Sentiments* (ASPIRES) scale self and observer version short forms. Samples of college undergraduates (229 women and 80 men) and community-based adults (249 women and 123 men) were included in this study. Results showed that the short forms were reliable, structurally valid, and possessed significant overlap with their long form parents. The results showed significant cross-observer convergence, providing evidence of discriminant validity. Scores on the short forms correlated significantly with a wide array of psychosocial outcomes, even after controlling for the predictive effects of personality. It was concluded that users can be confident that the short form versions validly represent the spiritual and religious constructs present in their parent versions.

KEY WORDS: ASPIRES, validity, reliability, short form

Spirituality and religiosity have received increased attention as important domains of study in the physical and social sciences. Such consideration is based on emerging research that continues to demonstrate the relation of spirituality and religiosity with salient outcomes such as well being, positive affect, and satisfaction with life (see Dy-Liacco, Kennedy, Parker, & Piedmont, 2005; Emmons & Paloutzian, 2003; Hill & Pargament, 2003; Idler et al., 2003; Piedmont, Ciarrocchi, Dy-Liacco, Mapa, & Williams, 2003). In other words, spirituality and religiosity contribute significantly and uniquely towards understanding and interpreting the human experience.

Although there are a myriad of scales that aim to measure spiritual and religious phenomena (e.g., Hill & Hood, 1999), few scales have developed much validity evidence for their utility (e.g., Gorsuch, 1984).

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Slater, Hall, and Edwards (2001) noted in their review of instruments that there exists a number of technical problems with these extant measures, including issues of ceiling effects, social desirability, and bias. Added to these problems are the additional limitations of a predominant Christian focus of many scales and the lack of much cross-cultural and interdenominational validity (Gorsuch & Miller, 1999; Piedmont & Leach, 2002). Nonetheless, the presence of such problems has not stunted research in this area.

In an effort to address many of these issues, the *Assessment of Spirituality and Religious Sentiments (ASPIRES)* scale was created. Piedmont (1999) proposed a systematic framework for scale development and assessment based on the Five Factor Model of personality (FFM; Goldberg, 1992). Within this approach, he conceptualized spirituality as a nondenominational motivational/trait construct. A motivational variable is a nonspecific affective force that drives, directs and selects behaviors. As an intrinsic source of motivation, spirituality is an endogenous quality that is relatively stable over time and impels individuals towards identifiable goals (Emmons, 1999). Consequently, spirituality would operate in ways consistent with other motivational traits, such as power, affiliation, and achievement. Such an approach also provides for a clear measurement model that is conducive to empirical analysis. Using this conceptual model, Piedmont has repeatedly shown that spirituality adds unique variance over and above the Five Factor Model in predicting salient psychosocial outcomes. These data support the contention that spirituality may represent a sixth factor of personality (Piedmont, 1999; 2001).

In defining spirituality as an individual's efforts to construe a broad sense of personal meaning within an eschatological context, Piedmont (1999) developed the Spiritual Transcendence Scale (STS) to operationalize the construct. The items of the STS were analyzed within the context of the Five Factor Model of personality (FFM; Digman, 1990; McCrae & John, 1992) and were shown to constitute an independent individual-differences dimension. The STS manifested a single overall factor comprised of three correlated subscales: *Prayer Fulfillment*, a feeling of joy and contentment that results from personal encounters with a transcendent reality; *Universality*, a belief in the unitive nature of life; and *Connectedness*, a belief that one is part of a larger human reality that is trans-generational and trans-group. The structure of the STS was found to be stable over several samples of mostly college students (Piedmont, 1999; 2001), religiously diverse groups (Goodman, Britton, Shama-Davis, & Jencius, 2005), and several cross-cultural samples (see

Bourdeau, Hinojosa, Perez, & Chu, 2004; Cho, 2004; Piedmont, 2007; Wilson, 2004). Further, the STS has been highlighted as one of the current inventories that demonstrates sound psychometric properties (King & Crowther, 2005; Slater, Hall, & Edwards, 2001).

In 2004, the STS was expanded to include a new dimension: *Religious Sentiments*. This aspect of the scale included two subscales. The first is *Religious Involvement*, which assesses the extent to which one is involved in, and committed to, the religious practices and rituals of one's faith group. The second scale is *Religious Crisis*, which assesses the extent to which one feels isolated from, and punished by, the God of his/her understanding (see Piedmont, 2004 for the development of these scales). Because these items capture religious involvements and experiences, they represent *personal sentiments*—aspects of functioning that are very different from those captured by the STS. The term “sentiment” is a classic term in psychology, and reflects emotional tendencies that develop out of social traditions and educational experiences (Ruckmick, 1920; Woodworth, 1940). Sentiments can be powerful motivators for individuals with direct effects on behavior. However, sentiments (like love, gratitude, and patriotism) do not represent innate, genotypic qualities like spirituality. This is why sentiments can, and do, vary across cultures and time periods and may be more amenable to change and modification than traits. Research has shown that spirituality and religious sentiments differentially predict outcomes (e.g., Piedmont et al., 2003; 2007). Together, measures of these two domains comprise the ASPIRES.

Although the ASPIRES long form has consistently shown psychometric viability (see Piedmont, 2004), the long form is not always the most effective means for measuring spirituality in certain contexts. For example, hospice patients, families in crisis, and bereaved individuals are often subject to significant amounts of stress that make it difficult for them to focus and complete lengthy tasks. Alternatively, when time constraints are salient, such as when either only a short time interval is available for assessment or one has a rather large assessment battery to begin with and cannot afford to add an additional lengthy measure. The ASPIRES short form (SF) was created to address the unique needs presented by these and other compromised populations and situations.

However, as Smith, McCarthy, and Anderson (2000) have noted, the use of a shortened form of an established inventory raises several serious psychometric questions: Will the reduced number of items significantly attenuate the scale's reliability? Will the short form sufficiently

replicate the factor structure of the original inventory? Will the short form have similar predictive power as its parent form? In order to examine the validity and reliability of the short form, the subsequent study sought to accomplish the following analyses: I am not certain how one sought to accomplish an analysis. The analysis is not the focus. The analysis is the tool that one used to get at some larger conceptual or methodological issue.

1. An assessment of the reliability of the self and observer versions.
2. An exploration of the factor structure of the short form.
3. An examination of the correlations of the short form with external criteria.
4. An examination of the incremental validity of the short form over and above the FFM.

The goal of this report was to provide support for the psychometric and interpretive utility of the ASPIRES short forms, both the self-report and observer-rater versions.

## METHOD

### *Participants*

*Community Sample:* Consisted of 377 individuals, 67% women and 33% men, ranging in age from 15 to 90 years (Mean = 43.8). Participants responded to demographic questions on ethnicity, marital status, religious affiliation, employment, education and income level. The majority of participants were Caucasian (68%), married (50%), Catholic (53%), employed full-time (54%), educated at the College level and above (93%), and reported incomes between \$25,000 to 50,000 per year (31%).

*Student Sample:* Consisted of 309 participants 74% women and 26% men, ranging in age from 18 to 42 years (Mean = 19.6) who completed self-report measures. Participants responded to demographic questions on ethnicity and religious affiliation. The majority of participants were Caucasian (83%) and Catholic (47%) with the remaining 53% representing mainline Protestant (25%), other Christian (16%) and 10% representing other faith traditions including atheist/agnostic. These individuals were instructed to obtain two individuals who knew them for at least three months to serve as raters. Of the 512 raters with valid information, 68% were women and 32% were men, ranging in age from

13 to 80 years (Mean = 24.8). On average, raters knew the participants for 7.14 years (range 1 month to 61 years). Raters were asked to rate how well they know the participant on a seven-point Likert-type scale from 1 *not very well* to 7 *extremely well*, with an average rating of 6.0, indicating raters knew participants very well. Students received course credit for their participation.

### *Measures*

*Assessment of Spirituality and Religious Sentiments-Short Form (ASPIRES-SF)*. Developed by Piedmont (2004), this instrument is a 13-item brief version of the longer version (ASPIRES). The first four items constitute the *Religiosity Index* and measure the frequency of involvement in religious rituals and related activity. Participants are asked to rate themselves on how often they: read the Bible/Torah/Koran/Geeta from 1 (*Never*) to 7 (*Several times a week*); read religious literature from 1 (*Never*) to 7 (*Several times a week*); pray from 1 (*Never*) to 7 (*Several times a week*); and, attend religious services from 1 (*Never*) to 5 (*Quite often*). The *Religiosity Index* score was computed by transforming responses to each item to a z-score and then summing. The sum of the z-scores provides a composite measure of religious involvement. The final nine items constitute the *Spiritual Transcendence Scale*, (STS) which measures an individual's efforts to create a broader sense of meaning beyond the here and now. Participants are asked to rate themselves from 1 (*Strongly agree*) to 5 (*Strongly disagree*). Individuals high on this dimension derive meaning from a wider context such as nature and community, whereas individuals low on this dimension represent those who are more materially driven and more focused on the physical realities of the here and now. The STS contains three correlated facet scales: *Prayer Fulfillment*, *Universality*, and *Connectedness*. Piedmont (2004) reported alpha reliabilities for both the self-report and observer-rating long form versions ranging from .59 to .89. Significant correlations of .81 to .96 were found between the self and observer short and long forms. Both the STS facet scales and Religiosity Index demonstrated significant incremental validity over personality in predicting a variety of psychosocial outcomes (Piedmont, 2004), providing evidence of discriminant validity. Participants in both samples completed this measure.

*Attitude Towards Abortion*. This is a single-item 9-point bipolar scale designed to capture the participant's attitude toward abortion from "very pro-abortion" (-4) to "very pro-life" (+4). This measure was given to participants in both samples.

*Bipolar Adjective Rating Scale (BARS).* An 80-item scale that presents pairs of adjectives descriptive of personal experience. Respondents rate themselves on adjective pairs on a 1- to 7-point Likert-type scale given the following choices, "Very Much Like Me," "Like Me," "Somewhat Like Me," or "Neutral." Developed and validated by McCrae and Costa (1987), the BARS was designed to measure the domains of the Five-Factor Model of personality (FFM) in adults. These domains are: *Neuroticism (N)*, the tendency to exhibit negative affect; *Extraversion (E)*, the depth and breadth of interpersonal engagement; *Openness (O)*, the degree to which one seeks and welcomes new experiences; *Agreeableness (A)*, the quality of one's interpersonal experiences; and *Conscientiousness (C)*, the drive and motivation inherent in working towards goals. This measure was given to participants in both samples. Alpha reliabilities of scores in the community sample were .81, .82, .74, .82 and .86 for N, E, O, A, and C, respectively. Alpha reliabilities of scores in the student sample were .74, .79, .69, .79 and .79 for N, E, O, A, and C, respectively.

*Bradburn Affect Balance Scale (ABS).* This 10-item True-False scale was developed by Bradburn (1969) to measure affective well-being as operationalized in the dimensions of Positive Affect (PAS), Negative Affect (NAS), and Affect Balance (NAS subtracted from PAS). Inter-item correlations for the PAS ranged from .19 to .75, and between .38 and .72 for the NAS. ABS scores correlated between .45 and .51 with a general question of reported happiness, .47 and .40 with an item about life satisfaction and  $-.33$  and  $-.36$  with a question on an individual's desire to change one's life. Overall correlations between negative and positive scale items were less than .10 (Robinson, Shaver, & Wrightsman, 1991). Alpha reliabilities in the community sample for the PAS and NAS scales were .46 and .66, respectively. Alpha reliabilities in the college sample were .54 and .57 for self-rated PAS and NAS and .61 and .59 for the observer ratings. This measure was given to participants in both samples.

*Delighted-Terrible Scale.* Andrews and Withey (1976) developed this single item scale as a cognitive measure of global well-being. Participants rate their overall level of life satisfaction on a Likert-type scale of 1 (*terrible*) to 7 (*delighted*). This measure was given to participants in both samples.

*Hope Scale.* The State Hope Scale (Snyder et al., 1996), a 6-item questionnaire given to participants in both samples, measures beliefs about one's success in pursuing current goals (agency) and one's

confidence in finding ways to attain current goals (pathways). Three items measure agency (e.g., “at the present time, I am it energetically pursuing my goals”) and three measure pathways (e.g., “I can think of many ways to reach my current goals”). People respond to items on an 8-point Likert-type scale with answers ranging from definitely false to definitely true. Snyder et al. (1996) reported good internal reliability, no gender differences, and discriminant validity beyond dispositional hope, positive affect, negative affect, and self-esteem. For this study, internal consistency reliability was .81 for the community sample and .79 for the student sample.

*Satisfaction with Life Scale (SWLS)*. Diener, Emmons, Larsen, and Griffin (1985) designed this inventory as a five-item, single factor measure of global cognitive life satisfaction. This measure has documented cross-cultural applicability as an index of happiness (Diener & Diener, 1995). This scale was given to participants in both samples. The alpha reliabilities of scores were .84 for both the community and student self-report samples and .88 for the observer sample.

*Optimism Scale*. Designed by Scheier, Carver, and Bridges (1994) The Live Orientation Test-Revised (LOT-R) measures optimism. This is a 10-item scale that reduces to six relevant questions after eliminating four filler items. Three of the items assess positive expectations for the future, for example, “I am always optimistic about the future;” and three items assess negative expectations, for example, “if something can go wrong for me, it will.” Responses range across a 5-point Likert-type scale from *strongly disagree* to *strongly agree*. The measure has a wide use in empirical research and has strong psychometric properties (Carver & Scheier, 2003). In the present study, the total scale is referred to as bipolar optimism and each 3-item component scale constitutes optimism or pessimism. In the community sample, alpha reliability was .72 for bipolar optimism, .31 for optimism, and .53 for pessimism. In the student sample, the alpha reliability was .50 for bipolar optimism, .52 for optimism and .52 for pessimism.

*Self-Actualization Scale (SAS)*. This measure was given to participants in both samples. A 15-item scale designed by Jones and Crandall (1986) to measure an individual’s developmental level based on Maslow’s hierarchy of needs. Items are responded to on a Likert-type scale ranging from 1 (*disagree*) to 4 (*strongly agree*). In a sample of 500 undergraduate students, the scale discriminated between self-actualized and non-self-actualized individuals. Significant correlations were found between scale scores and the Personal Orientation Inventory, Eysenck’s Personality

Inventory and the Rational Behavior Inventory (Jones & Crandall, 1986). The alpha reliability in the community sample was .75. Alpha reliabilities of scores in the student sample were .53 for the self-report and .49 for the observer rater ratings.

*Self-Esteem Scale.* Developed by Rosenberg (1965), this ten-item Likert-type scale captures the extent to which individuals experience positive self-acceptance and an overall sense of value and worth. Self-esteem is only one component of the self-concept, which Rosenberg defines as “totality of the individual’s thoughts and feelings with reference to himself as an object.” Items are answered on a four-point scale—from *strongly agree* to *strongly disagree*. A total score is calculated by summing responses to the items, with higher scores indicated greater self-esteem. This measure was given to participants in both samples. The alpha reliability of scores in the community sample and student sample were .88 and .85, respectively.

*Sexual Attitudes Scale (SEXOP).* A 21-item scale created by Fisher, Byrne, White, and Kelly (1988) to measure attitudes about sexuality, SEXOP captures sexual attitudes ranging from erotophobic (negative attitudes towards sex) to very erotophilic (positive attitudes towards sex). Items are answered on a 7-point Likert-type scale with response alternatives ranging from 1 (*strongly agree*) to 7 (*strongly disagree*). Correlations of scale scores with affective response to erotica were .61 for men and .72 for women, respectively. Correlation of scale scores with social desirability were .05 for men and  $-.05$  for women, respectively. In addition, this measure has been shown to correlate with authoritarianism, adherence to traditional sex roles, value orthodoxy, and various measures of sex-related topics (Fisher, Byrne, White, & Kelley, 1988). The alpha reliability in the community sample was .89.

*Prosocial Scale.* Developed by Rushton, Chrisjohn, and Fekken (1981), this 20-item scale captures altruistic behavior. Individuals rate the frequency with which they have engaged in altruistic behaviors on a 5-point Likert-type scale ranging from *never* to *very often*. Rushton et al. provided alpha reliabilities in five samples ranging from .78 to .86. Significant peer-self correlations were also obtained, whereas correlations with a measure of social desirability were nonsignificant. Rushton et al. also demonstrated significant convergence of the Prosocial Scale with both tests (e.g., Emotional Empathy Scale and the Social Interest Scale) and actual behaviors (e.g., volunteering to read to blind persons in response to a telephone solicitation). The alpha reliability of scores in the community sample was .90.



*Individualism/Collectivism Scale.* Developed by Dion and Dion (1991), this 15-item scale is an index of how much a person feels himself or herself to be a part of a larger community or group. Items are answered on a 1 (*Strongly Agree*) to a 5 (*Strongly Disagree*) Likert-type scale. Alpha reliability in the student sample was .55.

*Prosocial Behavior Inventory (PBI).* This is a 39-item scale, developed by De Conciliis (1993/1994), using an act-frequency paradigm. The behaviors selected for this scale were behaviors nominated by college students as descriptive of other students they believed to be prosocial. Participants were asked to answer each question on a 5-point Likert-type scale denoting the frequency with which they performed each activity over the previous six months. The alpha reliability of scores in the student sample was .89.

#### *Procedure*

Graduate students enrolled in a research methods class obtained the Community sample from among adults at a variety of churches and civic organizations. Each student was responsible for securing 15 participants. The order of presentation of the scales was varied systematically to control for any order effects. Participants were instructed to complete the scales in the order in which they found them and return the instruments in a sealed envelope.

The College sample was recruited from Introductory Psychology courses. All participants volunteered and received course credit for their participation. Students completed all materials in groups of from 10–20 individuals. The presentation of the scales was again counterbalanced to control for order effects.

#### RESULTS

Descriptive statistics and alpha reliabilities for the ASPIRES scales for both samples are presented in Table 1. As can be seen, with the exception of the Religiosity Index scores in the Community sample, all values are within normative limits (Piedmont, 2004). Six gender differences are noted, but the patterns of these differences are not consistent across the samples. Alpha reliabilities are acceptable; these values are especially noteworthy given that the facet scales contain only three items. The one exception is with the Universality scale in the rater sample. The alpha of .42 is very low and is in contrast to values found in the two

Table 1. Means and Standard Deviations for the ASPIRES Scales by Gender in the Two Samples

ASPIRES Scale	Men		Women		<i>t</i>	$\alpha$
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
<i>Student Sample</i>						
Self-Report <sup>a</sup>						
Prayer Fulfillment	52.23	14.01	51.41	9.38	.57	.92
Universality	53.14	11.48	49.95	11.13	2.14*	.60
Connectedness	49.54	12.46	49.27	11.09	.18	.76
Total Transcendence	52.09	13.37	50.31	1.55	1.18	.72
Religiosity Index	50.53	11.04	51.26	10.39	-.52	.79
Observer Rating <sup>b</sup>						
Prayer Fulfillment	54.31	11.55	50.13	8.72	2.96**	.93
Universality	50.20	7.19	48.25	7.90	1.67	.42
Connectedness	49.47	7.86	48.43	8.89	.79	.71
Total Transcendence	51.77	9.55	48.83	8.32	2.28*	.80
Religiosity Index	50.71	11.42	50.91	9.52	-.14	.89
<i>Community Sample</i>						
Self-Report <sup>c</sup>						
Prayer Fulfillment	50.39	9.85	52.88	10.55	-2.15*	.88
Universality	56.50	14.78	48.30	12.12	5.59***	.61
Connectedness	52.14	8.64	49.35	11.32	2.37*	.66
Total Transcendence	52.66	10.42	50.39	11.57	1.81	.72
Religiosity Index	42.68	12.44	40.26	10.48	1.89	.84

<sup>a</sup> *N* = 226 for women and *N* = 75 for men. <sup>b</sup> *N* = 209 for women and *N* = 56 for men. <sup>c</sup> *N* = 249 for women and *N* = 123 for men. All scores are presented as T-scores with a *M* = 50 and *SD* = 10, based on normative data from Piedmont (2004).

\* *p* < .05; \*\* *p* < .01; \*\*\* *p* < .001; two-tailed.

self-report samples. It is not clear why raters appeared to be inconsistent in their assessments of the targets on these items. Nonetheless, this short form appears to have acceptable internal consistency and to generate appropriate mean levels.

Nunnally and Bernstein (1994) provide an equation for estimating the correlation between the short and long forms of an instrument. This equation is based on the reliabilities of the two instruments. Using the data in Table 1 and comparing it to reliability information given in the ASPIRES manual (Piedmont, 2004; Table 9, p. 23), an estimate of content overlap can be made. For the community sample, the correlation between the Prayer Fulfillment, Universality, Connectedness, Total Transcendence, and Religious Involvement scales are: .86, .47, .37, .64, and .70, respectively. In the Student sample, the comparable values are: .83, .48, .32, .64, and .75, respectively. Content overlap estimated between the observer short and long forms are: .86, .32,

Table 2. *Pattern Matrix of the Principal Components Analysis of the Self-Report Religious Sentiments and Spiritual Transcendence Facet Scales of the ASPIRES for both Samples*

Religious Sentiments and STS Items	Factor			
	1	2	3	4
PF1	<b>.81</b>	.08	.08	.11
PF2	<b>.84</b>	.06	.12	.10
PF3	<b>.85</b>	.02	.17	-.03
CN1	.14	<b>.67</b>	-.03	<b>-.30</b>
CN2	.14	<b>.85</b>	-.02	-.07
CN3	-.14	<b>.82</b>	.01	.21
UN1	-.21	.19	<b>.42</b>	<b>.50</b>
UN2	.06	-.02	<b>.85</b>	.01
UN3	.25	-.05	<b>.81</b>	-.11
Frequency Read the Bible	.22	-.13	-.01	<b>.79</b>
Frequency Read other Religious literature	.14	-.11	.07	<b>.78</b>
Frequency of Prayer	<b>.65</b>	.01	-.01	<b>.37</b>
Frequency Attend Religious Services	<b>.33</b>	.01	-.15	<b>.73</b>

*Note.*  $N = 678$ , combined community and student sample. Values  $\geq \pm .30$  are given in bold.

.39, .72, and .82, respectively. Clearly, the short form has substantial content overlap with its longer parent.

#### *Construct Validity*

*Factor Analyses.* Self-report ASPIRES scores on all items for participants from both samples were combined and the resulting data set was subjected to a principal components analysis. Four eigenvalues emerged with values greater than one and the scree plot suggested that a four-factor solution was appropriate (the first five eigenvalues were 5.07, 2.17, 1.14, 1.12, and .81). The four factors explained 73% of the total variance. These factors were obliquely rotated and the results are presented in Table 2. As can be seen, the items from each scale define their own factor. These findings support the putative structure of the instrument. Only one inter-factor correlation exceeded .30, which was between Prayer Fulfillment and Religious Involvement.

The combined observer rating items were subjected to a principal components analysis. Only three eigenvalues emerged greater than 1 and the scree test also indicated that only three factors be extracted (first four eigenvalues were 5.7, 2.1, 1.3, and .80). These three factors explained 70% of the total variance. Again, these factors were obliquely rotated

Table 3. *Pattern Matrix of the Principal Components Analysis of the Observer-Rated Religious Sentiments and Spiritual Transcendence Facet Scales of the ASPIRES*

Religious Sentiments and STS Items	Factor		
	1	2	3
PF1	<b>.71</b>	<b>.35</b>	.14
PF2	<b>.73</b>	.26	.19
PF3	<b>.75</b>	.28	.15
CN1	<b>.43</b>	<b>.60</b>	.07
CN2	.24	<b>.70</b>	.10
CN3	<b>.35</b>	<b>.63</b>	.10
UN1	.06	<b>.37</b>	<b>.63</b>
UN2	-.01	.20	<b>.83</b>
UN3	-.05	<b>-.43</b>	<b>.86</b>
Frequency Read the Bible	<b>.90</b>	-.10	-.22
Frequency Read other Religious literature	<b>.82</b>	-.09	-.15
Frequency of Prayer	<b>.83</b>	-.11	.13
Frequency Attend Religious Services	<b>.85</b>	-.03	.00

Note.  $N = 266$ . Values  $\geq \pm .30$  are given in bold.

Table 4. *Cross-observer correlations for the self-reported and observer-rated scores on the ASPIRES scales in the Student Sample*

Self-Report Scales	Observer Ratings				
	1.	2.	3.	4.	5.
1. Prayer Fulfillment	<b>.52***</b>	.36***	.20***	.48***	.47***
2. Universality	.33***	<b>.27***</b>	.22***	.35***	.21***
3. Connectedness	.18**	.17**	<b>.48***</b>	.36***	-.03
4. Total Spiritual Transcendence	.47***	.36***	.41***	<b>.55***</b>	.31***
5. Religious Involvement	.56***	.31***	.05	.42***	<b>.77***</b>

Note. Convergent correlations are in bold.  $N = 261$ . \*\*  $p < .01$ , \*\*\*  $p < .001$ , two-tailed.

and the results are presented in Table 3. As can be seen, the three facets scales of the Spiritual Transcendence Scale each define a factor. Unlike findings found with the self-report data, the Religious Involvement items all loaded significantly on the factor defined by the Prayer Fulfillment items. Although the underlying structure of the spirituality dimension was found, the religiosity items appeared to be more strongly related with spirituality than noted with the self-report data.

*Consensual Validity.* To provide evidence of consensual validity, scores on the observer-rated and self-reported scales were correlated and Table 4 presents the findings. Each self-report scale converges significantly with

Table 5. *Correlations between the ASPIRES Short Form Scales and Psychosocial Criteria in both the Community and Student Samples*

Psychosocial Criteria	ASPIRES Scales				
	PF	UN	CN	TOTAL	RI
<i>Student Sample<sup>a</sup></i>					
Self-Actualization	-.01	-.10	.04	-.02	.12*
ABS Positive Affect	.15*	.23***	.28***	.29***	.06
ABS Negative Affect	-.05	.04	.07	.02	-.03
Hope	.17**	.11*	.22***	.24***	.08
Satisfaction with Life	.20***	.05	.21***	.23***	.07
Self-Esteem	.13*	.10	.15**	.18**	.08
Optimism	.23***	.27***	.18***	.31***	.15**
Delighted Scale	.22***	.10	.23***	.26***	.10
Attitude Towards Abortion (hi=pro-life)	.30***	.09	.01	.19***	.37***
<i>Community Sample<sup>b</sup></i>					
Delighted Scale	.11*	.10	.04	.11*	.04
Attitude Towards Abortion (hi=pro-life)	.17**	.09	-.15**	.04	.42***
Erotophilia	-.13*	.12*	.13*	.07	-.21***
Erotophobia	.11	-.17**	-.15**	-.12*	.15**
ABS Positive Affect	-.01	-.06	.05	-.01	-.10
ABS Negative Affect	-.07	-.06	.03	-.05	-.19***
Self-Actualization	.13*	.16**	.08	.18**	-.03
Optimism	.07	.15**	.06	.12*	-.09
Prosocial Orientation	-.12*	-.17**	-.12*	-.19***	-.14*
Satisfaction with Life	.13*	.08	.08	.14*	.09
Hope	.19***	.13*	.13*	.22***	.06
Self-Esteem	.15**	.11*	.10	.19***	.02

*Note.* PF = Prayer Fulfillment, UN = Universality, CN = Connectedness, TOTAL = Total Spiritual Transcendence Score, RI = Religious Involvement.

<sup>a</sup>  $N = 298$ ; <sup>b</sup>  $N = 310$ .

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ ; two-tailed.

its corresponding observer-rating, indicating that what individuals have to say about their own spiritual and religious activities agrees significantly with what knowledgeable observers have to say about them. The level of convergence is consistent with convergence values found for traditional personality constructs (e.g., FFM domains), where average  $r$ s range from .30 to .48 (Funder, Kolar, & Blackman, 1995; McCrae & Costa, 1987; Piedmont, 1994). This level of agreement is noteworthy given only three or four items per scale. Some evidence of discriminant validity is also noted. In examining the Spiritual Transcendence Scales, the convergent correlations are the highest in their respective rows and columns, except for Universality. This indicates that the spiritual qualities represented in these scales are sufficiently distinct and observable so as to be recognized accurately by outside observers.

*Correlations with external criteria.* Scores on the ASPIRES scales were correlated with a range of psychosocial criteria, and these findings are presented in Table 5. The ASPIRES scales correlate significantly with all of these outcomes. The pattern of associations are similar to those found with the long form, and the magnitude of associations are comparable, although slightly smaller (see Piedmont, 2004). Thus, the short form continues to manifest the construct validity obtained with its larger parent. However, the important question is whether these shortened scales continue to manifest incremental validity over personality in predicting these outcomes.

*Incremental validity.* A series of hierarchical multiple regression analyses were conducted to examine the incremental validity of the ASPIRES scales. The psychosocial criteria in Table 6 served as the outcome measures. On the first step of these analyses, the FFM personality

Table 6. *Incremental Validity of the ASPIRES Short Form Scales over the Five-Factor Personality Domains in the Community and Student Samples*

Psychosocial Criteria	FFM $R^2$	ASPIRES $\Delta R^{2a}$	Partial $F$	Scales
<i>Student Sample</i>				
Self-Actualization	.21***	.01*	5.21	CN
ABS Positive Affect	.08***	.07*	12.19	CN, UN
ABS Negative Affect	.23***	.01*	5.45	CN
Hope	.26***	.03**	10.31	CN
Satisfaction with Life	.32***	.02**	8.40	CN
Self-Esteem	.37***	.11	—	—
Optimism	.31***	.04***	16.18	UN
Delighted Scale	.39***	.03*	6.38	CN, PF
Attitude Towards Abortion	.06**	.11***	39.30	RI
<i>Community Sample</i>				
Delighted Scale	.22***	.00	—	—
Attitude Towards Abortion	.07***	.17***	69.97	RI
Erotophilia	.06**	.07*	7.66	RI, UN, PF
Erotophobia	.08***	.07*	6.52	RI, CN, UN, PF
ABS Positive Affect	.04*	.01*	3.99	UN
ABS Negative Affect	.03	.03*	9.68	RI
Self-Actualization	.29***	.00	—	—
Optimism	.16***	.03*	5.15	UN, RI
Prosocial Orientation	.13***	.03*	5.74	RI, CN
Satisfaction with Life	.18***	.01*	5.41	RI
Hope	.22***	.02*	6.41	PF
Self-Esteem	.39***	.00	—	—

*Note.* PF = Prayer Fulfillment, UN = Universality, CN = Connectedness, RI = Religious Involvement.

<sup>a</sup> Variance explained by ASPIRES scales over and above FFM personality domains.

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ ; two-tailed.

domains were entered as a block. On step 2, using a forward entry procedure, the ASPIRES scales were entered. As can be seen in Table 6, the ASPIRES scales provided significant explanatory variance over personality in all but four instances. Self-esteem was not incrementally predicted in both samples suggesting that this aspect of the individual may not be uniquely related to the spiritual and religious constructs of the ASPIRES. An inconsistent pattern is noted for the prediction of Delighted Scale scores, where an effect was found in the student sample but not with the older, community sample. Future research needs to determine whether there is an age-related effect occurring here or if this anomaly is due to some sample specific phenomenon. However, some consistent patterns of findings do emerge. Similar ASPIRES scales were found to incrementally predict Positive Affect, Optimism, and Attitudes towards Abortion scales.

In order to examine the incremental validity of the observer form, a similar series of hierarchical multiple regression analyses were conducted using the observer versions of both the psychosocial criteria and the ASPIRES scales. Table 7 presents these results. The observer-rated ASPIRES scores provided significant explanatory variance over personality in all but one instance, with Satisfaction with Life. The observer version of the ASPIRES carries with it comparable construct and incremental validity as the self-report version.

Table 7. *Incremental Validity of the Observer-Rated ASPIRES Short Form Scales over the Five-Factor Personality Domains in the Student Sample*

Observer-Rated Outcomes	Observer-Rated ASPIRES			
	FFM $R^2$	ASPIRES $\Delta R^{2a}$	Partial $F$	Scales
ABS Positive Affect	.12***	.04**	11.83	UN
ABS Negative Affect	.05*	.02*	5.77	UN
Delighted Scale	.22***	.04***	14.88	RI
Attitudes Towards Abortion	.14***	.06***	19.47	RI
Satisfaction with Life	.22***	.00	—	—
Self-Actualization	.00	.03**	7.29	UN
Prosocial Orientation	.00	.05*	6.49	PF, CN
Individualism/Collectivism	.13***	.02*	6.21	UN

*Note.* PF = Prayer Fulfillment, UN = Universality, CN = Connectedness, RI = Religious Involvement.

<sup>a</sup> Variance explained by ASPIRES scales over and above FFM personality domains.

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ ; two-tailed.

## DISCUSSION

Creating a short form brings with it the advantage of time saving in both completing and scoring the reduced instrument. Short forms are well suited for situations where time is limited or an individual has reduced capacities for sustained testing. However, with these advantages come potential problems as well. Smith et al. (2000) have noted the numerous problems that arise in short form development. Simply stated, their concern is that one cannot assume that because the long form version is reliable and valid, the short form will be equally robust psychometrically. Smaller scales tend to be less reliable and, therefore, less valid than longer instruments. Factor structure can be compromised because the smaller set of items does not adequately sample the content domain of the construct as well as the original scale. This leads to the short form having inadequate overlapping variance with the full form. In other words, short forms may not be the valid reflections of their parent.

The findings presented here address many of these concerns. As was shown, both the self and observer versions of the short form were adequately reliable. The use of three- and four-item scales did not compromise the internal consistency of the instrument. The principal components analyses showed that the short forms replicate the underlying factor structure of the original version, and that these scales showed significant consensual validity. Thus, the short form scales may be viewed as structurally equivalent to their parent version. Estimated short-long form correlations showed the short forms to have substantial overlap with their longer parents. Correlations with the diverse psychosocial outcome criteria underscored the fact that the short forms have comparable content coverage as well: information contained on the scales related to as wide an array of outcomes as the longer original. Finally, evidence of the true utility of the short forms was found in tests of their incremental validity. The short form scales, like their parent, are able to provide significant explanatory variance over and above any predictive effects of personality. Users can be confident that the ASPIRES short forms, both self- and observer-versions, capture content comparable to their respective long forms. The data presented here show that the ASPIRES short forms avoid many of the problems outlined by Smith et al. (2000).

This naturally raises the question, "If the short forms are so comparable, why not use them exclusively?" The short forms do provide



important savings in time surrounding administration and scoring and their brevity makes them useful in a wide range of applications, especially with elderly or medical samples. However, it should be noted that the longer forms evidence higher reliabilities and incremental validity coefficients. Thus, when time and circumstance permits, one should always use the longer forms because they carry more psychometric power. Another reason for using the long form is that it contains the *Religious Crisis* scale, which measures the degree to which an individual feels abandoned, isolated, and punished by God. These items were not included on the short forms, but they do provide important information about the psychological stability of the individual (see Piedmont et al., 2007). Thus, the short forms do not contain *all* of the information of their parent scales.

Nonetheless, future research needs to outline more clearly the utility of these short forms by correlating them directly with long form scores. The positive findings noted here across two different samples (one adult, one college student) need to be replicated across other faith denominations and cultural contexts. The full ASPIRES has shown itself reliable and valid in these different applications (see Piedmont, 2004), and until the short forms receive comparable analysis, researchers and clinicians need to be careful in using these forms outside of a general US, Christian-oriented sample. Nonetheless, these findings contribute to the increasing research base showing the empirical value of the ASPIRES family of scales.

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