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The Intrinsic Spirituality Scale: A New Six-Item Instrument for Assessing the Salience of Spirituality as a Motivational Construct

David R. Hodge

ABSTRACT. One facet of the growing interest in spirituality and religion has been the tendency to conceptualize spirituality and religion as distinct, but overlapping, constructs. While this recent distinction has led to the creation of new spirituality measures, many of these instruments can be faulted on two grounds: they use terms (e.g., God) that limit their validity with non-theistic populations, and they fail to build upon pre-existing scientific work. To address these two concerns, this paper modifies the most prominent instrument in the field of the psychology of religion, Allport and Ross' (1967) measure of intrinsic religion, to tap spirituality. The modified six-item intrinsic spirituality scale assesses the degree to which spirituality functions as an individual's master motive, for both theistic and non-theistic populations, both within and outside of religious frameworks. *[Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail address: <docdelivery@haworthpress.com> Website: <<http://www.HaworthPress.com>> © 2003 by The Haworth Press, Inc. All rights reserved.]*

KEYWORDS. Spirituality, religion, measures, intrinsic, scales

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As the limits of modernity have come into fuller relief, there is a growing realization that spirituality and religion are fundamental aspects of human existence for many individuals (Gallup & Lindsay, 1999). Indeed, as a number of studies indicate, these variables have been associated with a wide number of salutary constructs (Ellison & Levin, 1998; Gartner, 1996; Koenig, McCullough & Larson, 2001; Pargament, 1997) and many clients desire to utilize these personal strengths to ameliorate problems (Bart, 1998; Privette, Quackenbos & Bundrick, 1994). Consequently, interest in researching spirituality and religion is growing among social workers (Canda & Furman, 1999).

Although the terms religion and spirituality are often used interchangeably (Pellebon & Anderson, 1999), recently attempts have been made to distinguish these two overlapping constructs (Carroll, 1998). Religion, which is primarily social, is typically understood to flow from spirituality, which is individual (Anderson & Worthen, 1997; Carroll, 1998). More specifically, spirituality is generally conceptualized as what Cascio (1999, p. 130) refers to as an "intrinsic phenomena," as a personal, experiential connectedness with Transcendence or Ultimate Reality that is expressed in one's beliefs and behaviors. Religion tends to be conceptualized as an external, community-based phenomena in which a particular organized set of beliefs, behaviors, and rituals are institutionalized by individuals sharing similar spiritualities (Canda, 1997; Canda & Furman, 1999; Carroll, 1997; Carroll, 1998; Koenig et al., 2001; Miller, 1998; Zinnbauer et al., 1997). For instance, Hodge (2001, p. 36) defines the two terms as follows: "spirituality refers to an individual's relationship with God (or perceived Transcendence), while religion is defined as a particular set of beliefs, practices, and rituals that have been developed in community by people who share similar existential experiences of transcendent reality."

Most research, however, has been based upon measures of religion, which are typically unidimensional (Musick, Koenig, Larson & Matthews, 1998). Frequency of attendance at worship services, for instance, is a commonly used measure (Musick et al., 1998). However, in addition to problems concerning the lack of multidimensionality, it is apparent that people can have a relationship or sense of connectedness with the Transcendent apart from attendance at institutionalized worship services. Consequently, while such measures may serve as a reasonable proxy for religion, they fail to accurately tap spirituality.

The realization that spirituality and religion are distinct constructs has fostered the emergence of spirituality as a discrete area of inquiry (Miller, 1998). A keyword search of Social Work Abstracts for articles

addressing spirituality independently from religion, reveals 110 publications, over half of which have appeared in the past five years (i.e., since 1996). Similarly, 72 articles mentioned spirituality in the abstract without mentioning religion while 37 articles mentioned spirituality in the title independent from religion.

As might be expected, given the developing interest in spirituality, many of the above articles are conceptual in nature and calls for more research on spirituality are common (Hodge, 2000; Kamyra, 2000; Kamyra, 1997; Miller, 1998). In response to the growing interest in assessing spirituality in the social sciences, a number of multidimensional instruments designed to tap this construct have been developed (Hill & Hood, 1999; Mytko & Knight, 1999).

Many of these instruments, however, can be criticized on at least two grounds. First, as Hill and Hood (1999) observed in their review of a number of prominent measures, instruments frequently mention God, which raises validity questions with non-theistic populations. The Spiritual Well-Being scale serves as a case in point. This instrument has been used by a number of social workers (Kamyra, 2000; Kamyra, 1997; Nathanson, 1995), and is perhaps the most widely used measure of spirituality in the social sciences (Ellison & Smith, 1991; Hill & Hood, 1999). Half the items in this 20-item instrument mention God (e.g., I believe that God loves me and cares about me).

Given the theistic nature of the general public in the United States (Gallup & Castelli, 1989; Gallup & Lindsay, 1999), it is understandable that many scales mention God. Nevertheless, in an increasingly diverse society, there are growing numbers of individuals who understand their spirituality in non-theistic terms (Richards & Bergin, 1997). For such individuals, items that refer to God may not be valid indicators of their spirituality. Indeed, social workers exploring the importance of spirituality have called upon researchers to develop instruments that are more culturally sensitive (Kamyra, 1997).

The second concern regarding many extant measures is the failure to build upon pre-existing research. For instance, Kennedy, Davis, and Taylor (1998) explored the relationship between spirituality and well-being using a multidimensional measure of spirituality with no prior psychometric history. No rationale was provided for the selection of the five items that purported to measure spirituality. While constructing the scale independently of the existing literature allowed the authors to devise a scale without mentioning God, such procedures seem to depart from good scientific practice.

Unfortunately, the failure to build upon the extant literature seems to be a common occurrence. Weaver and associates (1998a; 1998b; 1998) have explored how often studies that analyze a religious or spiritual variable cite previously published research on spirituality and religion across a number of disciplines. In psychology, which was the discipline that recorded the most frequent use of the pre-existing literature, 71% of studies that analyzed a religious or spiritual variable *did not* cite previously published research (Weaver et al., 1998a).

The failure to build upon previous scientific work should not be attributed to a lack of available literature. The psychology of religion is a discipline that has developed a deep body of research over the course of a number of decades (Wulff, 1997). As Miller (1998) observes, this literature is not widely known in academic circles. Yet, a considerable number of multidimensional measures with established psychometric properties have been developed in the field of the psychology of religion (Hill & Hood, 1999; Mytko & Knight, 1999).

In light of the two problems delineated above, the most appropriate solution may be to modify an existing measure from the psychology of religion to measure spirituality. Given that spirituality and religion are overlapping constructs, researchers have observed that certain measures of religiosity are essentially tapping into the construct of spirituality (Musick et al., 1998). Tailoring an appropriate instrument by removing explicitly religious references, such as church, religion, attendance, etc., may result in an instrument that more accurately measures spirituality. Similarly, removing reference to a supreme being may foster applicability with a wider number of non-theistic populations while building upon an instrument with established psychometric properties.

Allport and Ross' (1967) measure of intrinsic religious orientation represents perhaps the most appropriate instrument for modification. The religious orientation framework pioneered by Allport and Ross is the dominant paradigm in the psychology of religion, with a number of modified versions as well as the original instrument still in widespread use (Hill & Hood, 1999; Williams, 1994). Reviews indicate that the measure of intrinsic religion is associated with a wide variety of salutary characteristics (Donahue, 1985; Ventis, 1995; Wulff, 1997). The measure has been used in a number of different settings, has respectable reliability coefficients, with Cronbach's Alphas commonly in the mid '80s, and good validity (Burris, 1999; Trimble, 1997). For interested readers, Burris (1999) provides a concise review of the research on the reliability and validity of Allport and Ross' measure of intrinsic religion.

The measure of intrinsic religion taps into a construct that might be referred to as spirituality as assessed within the context of religion (Pargament, 1999). More specifically, Allport and Ross (1967) theorized that intrinsic believers *live* their religion and stand in contrast to people who *use* religion for their own ends. For intrinsics, their religion, which typically posits some type of connectedness with Transcendence as the central theme, provides the “master motive” for life, directing their thoughts and actions (Allport & Ross, 1967, p. 434). Because their internalized faith provides the central motivation for life, extrinsic factors, such as the degree of support they encounter in religiously-based institutional settings, are less significant as motivating influences in their lives. In other words, the measure can be seen as tapping the level of internalized, spiritual commitment of those individuals who express their spirituality within a religious framework (Burris, 1999).

Given the congruence between the construct the measure of intrinsic religion is posited to tap and various conceptualizations of spirituality, researchers have recommended that the intrinsic scale be used to measure spirituality (Kass, Friedman, Leserman, Zuttermeister & Benson, 1991). Indeed, the measure of intrinsic religion has been used as a measure of spirituality by a number of researchers (Knox, Langehough, Walters & Rowley, 1998; Spalding & Metz, 1997) while other researchers have used it to test the concurrent validity of new spirituality scales (Kass et al., 1991; Kennedy et al., 1998; King, Speck & Thomas, 2001).

Accordingly, this paper modifies Allport and Ross’ (1967) measure of intrinsic religion to more accurately tap spirituality both inside and outside of religious settings. As implied above, items are reformatted to specifically assess spirituality while remaining faithful to Allport and Ross’ underlying theoretical understanding of an intrinsic motivation. A series of confirmatory factor analyses are conducted using LISREL to reduce these items into a six-item scale with good reliability and validity.

METHOD

Consistent with the development of most other measures (Hill & Hood, 1999), a convenience sample of university students (N = 172) was employed from a medium sized, Baptist affiliated university. The questionnaire consisted of 37 questions and took approximately 10 to 20 minutes to fill out. Consistent with other school-based surveys ad-

ministered during class time, essentially all students completed the questionnaire (Francis, 1997).

The age of the sample ranged from 17 to 25 years old with a mean of 19.26 ($SD = 1.35$). In terms of gender, approximately two-thirds (67%) were female. Sixty-nine percent of the students were white, 12% Hispanic, 9% black, while 10% selected "other." The number of years of university level education ranged from half a year to five years. The mean level of education was 1.79 years ($SD = 1.11$) and the median was 1.0 year.

Although the survey was administered to students taking sociology classes, a wide range of proposed majors was evident, suggesting a relatively broad cross-section of students was sampled. Forty different majors were listed, with the most prominent being biology/pre-med (12.1%), psychology (11.6%), undecided (9.2%), and sociology (8.7%).

In addition to demographic questions, the questionnaire included seventeen items based upon Allport and Ross' (1967) measure of intrinsic religion. Existing items drawn directly from Allport and Ross' measure were re-worked. References to religion were eliminated and items were formatted to directly tap spirituality. Additionally, a number of new items were created. These items were based upon Allport and Ross' underlying conceptualization of intrinsic motivation (Burriss, 1999; Allport & Ross, 1967), as well as subsequent work on religious motivation by Gorsuch, Mylvaganam, and Gorsuch (1997) who sought to develop understandings of religious motivation that apply across religions and cultures.

In place of the traditional five point Likert scales employed by Allport and Ross (1967), the phrase completion method developed by Hodge and Gillespie (in press) was employed. These authors have argued that the typical Likert format of stating a proposition and asking respondents to indicate their level of agreement or disagreement suffers from a number of methodological limitations, such as the added cognitive load that occurs when respondents must disagree with a negatively worded statement (Barnette, 2000) and the use of multiple dimensions (Brody & Dietz, 1997). Consequently, they suggest the use of phrase completions in which respondents are asked to complete a phrase by selecting an option from an eleven point response key which reflects the underlying theoretical continuum of the construct in question. By asking respondents to think along a single dimension which clearly presents a range from zero to some theorized maximum amount of the attribute the item is posited to tap, reliability and validity are enhanced

relative to traditional Likert scales (Brody & Dietz, 1997; Barnette, 2000; Roberts, Laughlin & Wedell, 1999).

As an example, Allport and Ross' (1967) original measure of intrinsic religion contained the item, "Religion is especially important to me because it answers many questions about the meaning of life." Typically, respondents are asked to indicate their level of agreement or disagreement on a five-point Likert scale. To tap into spirituality, the item was transformed by removing the reference to religion and replacing it with spirituality. Additionally, the underlying theoretical continuum was delineated along an eleven-point response key. In other words, the scale ranges from zero at one end of the response key, where spirituality answers no questions about life, to ten at the other end of the response key, where spirituality answers absolutely all questions about life. Question number one in Table 1 illustrates the revised item with the specified theoretical continuum of responses. As can be seen, the problem of response set bias is addressed by reversing the direction of the response key for each item.

As can be seen in Table 1, potential respondents were oriented to the phrase completion method with a brief introductory paragraph. To ensure that respondents understood that spirituality was being defined in a manner that included both theistic and non-theistic expressions of connectedness with Ultimate Transcendence, a definition was provided to orient potential respondents. More specifically, spirituality was defined as "one's relationship to God, or whatever you perceive to be Ultimate Transcendence." Respondents seemed to have little difficulty understanding the instructions or the items.

An initial exploratory factor analysis was performed with the seventeen hypothesized indicators of spirituality derived from Allport and Ross' (1967) measure of intrinsic religion and related theory. The exploratory factor analysis was conducted to confirm that all seventeen indicators of spirituality loaded upon a single factor. In accordance with theory, the results indicated the presence of a single factor.

A number of items were used to test concurrent validity of the new spirituality measure. Allport and Ross' (1967) measure of intrinsic religion was incorporated into the questionnaire using traditional Likert response keys. Since the new measure of intrinsic spirituality is tapping into a construct that is very similar to the traditional measure of intrinsic religion, a high degree of correlation was expected. Consistent with other researchers who have used the measure of intrinsic religion to provide a measure of concurrent validity (Kennedy et al., 1998), the six

items retained by Genia (1993) in her factor analysis of Allport and Ross' original scale were used.

Three measures of substance use/abuse were also included. Based upon previous research (Benson, 1992; Donahue & Benson, 1995; Francis, 1997; Gorsuch, 1995; Kutter & McDermott, 1997; Koenig et al., 2001), it was expected that the new measure of intrinsic spirituality would correlate negatively with these items. In other words, respondents who recorded higher levels of spirituality would record lower levels of substance use. Miller (1998) theorized that spirituality and substance abuse are incompatible since one tends to drive out the other. The three items were "I usually drink alcohol" (never = 0, every day = 6), "I tend to get drunk drinking alcohol" (never = 0, a few times a week = 6), and "In terms of cigarettes, I generally smoke" (never = 0, a pack or more a day = 6). These items are consistent with those used by other substance abuse researchers (e.g., Kutter & McDermott, 1997).

Finally, three items designed to tap levels of secure and insecure attachment were included. Theorists working in the area of object relations have suggested that individuals' relationships with their early caregivers may affect latter relationships with God (Hall, Brokaw, Edwards & Pike, 1998; Rizzuto, 1979; Rizzuto, 1998; Vitz, 1999). It is important to note that the empirical relationship between spirituality and attachment are not as well researched compared to the relationship between spirituality and substance use/abuse. However, based upon theory and previous research (Hall et al., 1998; Kirkpatrick & Shaver, 1990) it was expected that intrinsic spirituality would correlate positively with secure attachment while insecure attachments would exhibit neutral to negative correlations. The three attachment items, developed and used by Hazan and Shaver (1987) in addition to other researchers (Granqvist, 1998; Kirkpatrick & Shaver, 1990), consist of descriptions that are designed to reflect secure attachment and insecure attachments (e.g., avoidant attachment and ambivalent attachment). For example, the secure attachment description reads as follows, "She was generally warm and responsive; she was good at knowing when to be supportive and when to let me operate on my own; our relationship was almost always comfortable, and I have no reservations about it." Individuals were asked to consider the degree to which each paragraph was descriptive of their childhood relationship with their mothers or primary care-givers. The level of attachment was operationalized by asking respondents to indicate their degree of agreement on a seven point Likert scale (strongly disagree = 1, strongly agree = 7) with the three descriptions.

Data screening was conducted with Preliis 2.30. In keeping with widely accepted practice, the 11 point scales associated with the spirituality measure were treated continuously for statistical purposes (Byrne, 1998). Preliis recommended transformations were performed on all variables. Consequently, the skewness and kurtosis values for all variables fell within a range of -1 to $+1$, values that approximate a normal distribution (Schumacker & Lomax, 1996). Tests of univariate normality were met for all variables. However, a test for multivariate normality was not supported, indicating a non-normal multivariate distribution. The transformation process did, however, improve the multivariate distribution, as can be seen in the decrease in the skewness and kurtosis chi-square value (477.62 vs. 216.01). Finally, two cases with missing values were imputed with values taken from other cases with similar response patterns (Joreskog & Sorbom, 1996).

RESULTS

To obtain the six-item intrinsic spirituality scale delineated in Table 1, a series of confirmatory factor analyses was conducted with LISREL 8.30 (Joreskog & Sorbom, 1993). An initial measurement model was constructed consisting of the seventeen indicators of spirituality. Spirituality functioned as the single latent variable in the model.

When constructing measurement models, three values are of particular importance. For each observed variable, LISREL generates measurement equations with values for factor loadings or factor weights, error variances, and squared multiple correlation or R^2 . As Joreskog and Sorbom (1993) note, the factor loadings, which appear as path coefficients in LISREL generated path diagrams, function as validity coefficients. In other words, the factor loading or path coefficient indicates how accurately the item measures the latent variable. The error variance represents the error in the variable or measurement error. Finally, the R^2 is typically understood to represent the reliability coefficient of the observed variable (Joreskog & Sorbom, 1993).

After estimating the measurement model, these three values were examined for each of the seventeen items. Variables with low reliabilities and high levels of measurement error relative to their respective validity coefficients were noted and the worst performing variable was eliminated from the model (Joreskog & Sorbom, 1993). After eliminating the most ineffective item, a new matrix was computed, a new model was estimated, the values for the remaining observed variables were again ex-

amined, and the worst performing item was eliminated. This process was repeated, eliminating one item at a time, until the six most valid and reliable variables of the latent construct remained.

Table 2 reports the validity coefficients, the measurement error, and the reliability coefficients for each of the six observed variables in the scale. The validity coefficients ranged from values that were 1.27 times higher than the error measurement (item number 1) to values that were 2.36 times higher (item number 5). With a mean validity coefficient of 1.74 times the error measurement, the scale would seem to be a reasonably valid measure of spirituality. Similarly, the .80 mean reliability coefficient indicates that the scale is a highly reliable measure of spirituality. Using the Cronbach's Alpha measure of internal consistency, a coefficient of .96 was obtained for the six-item scale.

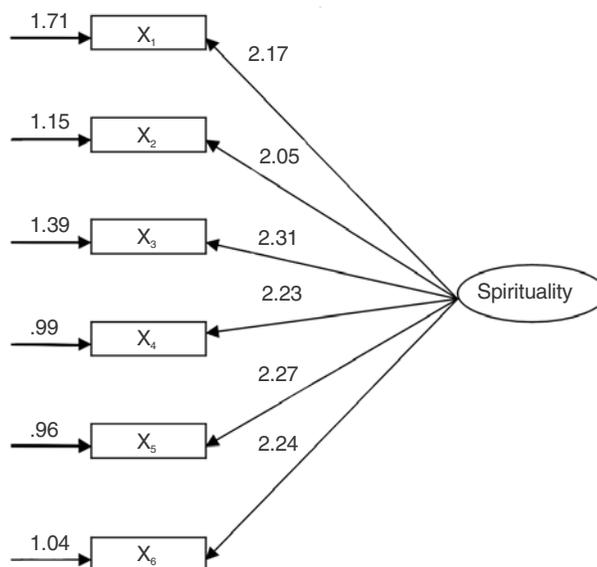
Figure 1 depicts the final model in traditional Structural Equation Modeling (SEM) terms, with rectangles representing observed variables and an oval denoting the latent variable. Path coefficients for each observed variable, which correspond to the validity coefficients listed in Table 2, are depicted on the right, over the arrows running from the latent variable to the observed variables. The arrows to the left of the observed variables depict the error variance for each variable and also correspond to the values listed in Table 2.

Figure 2 depicts the t-values for the relationships in the measurement model. The t-values represent the parameter estimates, in this case, the factor loadings, divided by the standard errors (Byrne, 1998). T-values that exceed 1.96 indicate that the parameters are significant at the .05 level (Byrne, 1998). As long as the sample size exceeds 120, non-signif-

TABLE 2. Validity and Reliability Coefficients

Item number	Unstandardized validity	Measurement error	Reliability
1	2.17	1.71	.73
2	2.05	1.15	.78
3	2.31	1.39	.79
4	2.23	.99	.83
5	2.27	.96	.84
6	2.24	1.04	.83
Mean	2.11	1.21	.80

FIGURE 1. Measurement Model with Path Coefficients and Error Terms

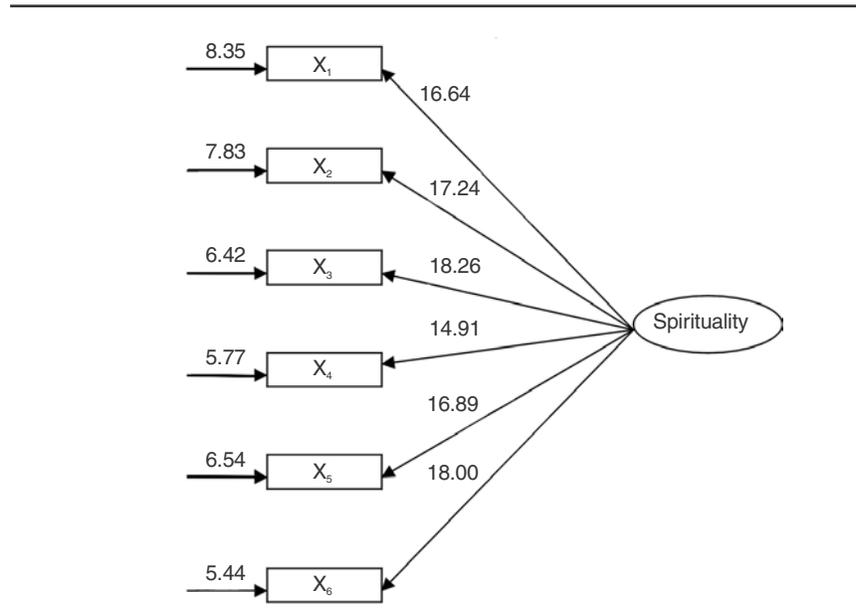


icant parameters should be eliminated from the model in the interests of parsimony. As can be seen in Figure 2, however, all the parameter estimates are significant.

In SEM, a model is constructed in the form of a restricted covariance matrix and compared with data in the form of the original sample covariance matrix. The extent to which the model corresponds to the data is described as the fit. If the model exhibits a high degree of correspondence with the data, then the fit is said to be good. If the model does not conform to the data well, then the model is rejected since it fits the data poorly.

There is, however, little consensus about which fit indices provide accurate assessments of a model's fit. Perhaps the most common method of assessing fit is the normal theory χ^2 goodness-of-fit test. This test, however, is dependent upon a multivariate normal distribution among the observed variables. The lack of a multivariate normal distribution with normal theory estimators such as Maximum Likelihood result in inflated χ^2 values, which leads to the rejection of many true models or Type II errors (West, Finch & Curran, 1995). As Crowley

FIGURE 2. Measurement Model Depicting T-Values



and Fan (1997) note, the widely used normal theory χ^2 goodness-of-fit test has little meaning when the multivariate distribution is not normal.

To overcome the bias induced by non-normality, alternative estimation approaches have been developed. In LISREL, for example, the Robust Maximum Likelihood (RML) method can be used to obtain the Satorra-Bentler scaled χ^2 statistic. Under non-normal conditions, the Satorra-Bentler scaled χ^2 statistic corrects or scales the χ^2 statistic to account for the degree of multivariate non-normality (Hu & Bentler, 1995; West et al., 1995). Consequently, given the lack of multivariate normality among the variables in this study, the RML method of estimation was used and the Satorra-Bentler scaled χ^2 statistic is reported. It should also be noted that this approach also provides corrected standard errors.

In SEM, the null hypothesis is that the model fits the data. Since one wishes to retain the null hypothesis, in contrast with most other hypotheses testing situations, a non-significant χ^2 value is desired ($p > .05$) because a non-significant value indicates that the model fits the data.

Thus, as can be seen in Table 3, the non-significant .092 *p* value obtained in this present study suggests that the model fits the data.

Given the lack of consensus regarding fit indices, authors are encouraged to report the results of a number of indices and examine the residuals in making their assessment of model fit (Byrne, 1998; Crowley & Fan, 1997; Hoyle & Panter, 1995). In addition to the χ^2 statistic, Table 3 lists four other commonly used fit statistics (Hoyle & Panter, 1995; Schumacker & Lomax, 1996). These fit indices also indicate that the model fits the data. A RMSEA value of .062 suggests a reasonably good fit (Byrne, 1998) while the values for the CFI, IFI, and AGFI are all above .90, a value that is widely accepted to indicate a good fit (Hoyle, 1995).

The residuals also provide information about the goodness-of-fit between the model and the data (Crowley & Fan, 1997). When a stem-and-leaf plot of the residuals is computed, a good fitting model is characterized by a symmetrical distribution in which most points cluster around zero with relatively few points in the tails (Byrne, 1998). An analysis of the residuals of the present model suggested a relatively good fit. An examination of the stem-and-leaf plot revealed that most of the residuals clustered around the zero point.

Finally, to test concurrent validity, correlations were computed between the new intrinsic spirituality scale and the measure of intrinsic religion, the substance use/abuse items, and the attachment items. All hypothesized relationships were supported. As expected, given that the measure of spirituality was theorized to tap a construct similarly to intrinsic religion, but slightly wider, a high degree of correlation was evident between the new measure of intrinsic spirituality and the original measure of intrinsic religion ($r = .911$, $p < .001$). Consistent with previous research, spirituality was negatively correlated with alcohol use ($r = -.489$, $p < .001$), frequency of binge drinking ($r = -.464$, $p < .001$), and

TABLE 3. Fit Statistics

Satorra-Bentler scaled Chi-square	$\chi^2 = 14.96$, $df = 9$, $p = .092$
Root mean square error of approximation (RMSEA)	.062
Comparative fit index (CFI)	.99
Incremental fit index (IFI)	.99
Adjusted goodness-of-fit index (AGFI)	.92

tobacco use ($r = -.376$, $p < .001$). Finally, spirituality was positively correlated with secure attachment ($r = .223$, $p = .003$) and negatively correlated with both forms of insecure attachment, avoidant ($r = -.168$, $p = .028$) and ambivalent ($r = -.210$, $p = .006$).

DISCUSSION

This paper endeavored to construct a new measure of spirituality based upon the most prominent measure of religion in the discipline of the psychology of religion, namely, Allport and Ross' (1967) measure of intrinsic religion (Hill & Hood, 1999; Williams, 1994). While Allport and Ross' measure can be seen as tapping spirituality within a religious context (Kass et al., 1991; Knox et al., 1998; Spalding & Metz, 1997), the new measure taps spirituality both within and outside of, a religious framework. In other words, the new instrument taps a similar, but somewhat wider, construct. This perspective is supported by the high degree of correlation between the new six-item measure and the traditional measure of intrinsic religion. Since the latent construct is similar, this new measure allows researchers to build upon the large body of work that has developed around the construct of intrinsic religiosity (Donahue, 1985; Ventis, 1995; Wulff, 1997).

Consistent with Allport and Ross' (1967) theorizing, this new measure of intrinsic spirituality taps the degree to which spirituality is salient in an individual's life as a motivating influence. The measure assesses the degree to which individuals find their ultimate purpose for life in their spirituality. While other factors may be important, for the person motivated by their spirituality, these other factors are subordinated to their spirituality, which informs all other dimensions of their existence. More specifically, it is their relationship with the Transcendent that underlies their personal growth, their decisions, and all other aspects of their lives. For these individuals, spirituality is more important than anything else, functioning as a master motive that directs all other dimensions of their lives and answers their questions about life.

Respondents' level of intrinsic spirituality is indicated by taking the sum of their scores on the six items and dividing by six. The theoretical range is zero to ten. A score of zero represents an individual for whom spirituality is not operative in their life as a motivating factor. In other words, they have no animating relationship with the Transcendent. Conversely, a score of ten denotes a person who is motivated by their spirituality to the highest degree possible.

As McGartland-Rubio, Berg-Weger, and Tebb (1999) observe, SEM offers a number of advantages for evaluating the validity and reliability of measures compared to traditional approaches such as Cronbach's alpha. These advantages are particularly important for complex constructs that are difficult to tap, such as spirituality. Constructs that are difficult to measure may contain significant amounts of error in individual items that is difficult to detect with the widely used Cronbach's alpha. Error in measurement items fosters increased levels of Type I and Type II errors. SEM advances psychometric evaluation by estimating the error present in each indicator and providing reliability and validity coefficients for each item. The good reliability values obtained for the measure of intrinsic spirituality suggest that the six-item scale is a reliable measure of spirituality as a motivating influence.

Reasonably good validity coefficients were also obtained. The fit indices indicated that the model fit the data and all three of the measures designed to test concurrent validity performed as expected. In other words, the validity of the instrument is further supported since it performs in accordance with existing theory and research in the three areas explored.

Further research should be undertaken with other samples to confirm the reliability and validity of the measure. Given that this study was conducted with a primarily Christian sample, additional research should be conducted with non-Christian and non-theistic populations to confirm that the instrument does, in fact, tap respondents' level of spiritual commitment among these populations. It should also be pointed out that with samples drawn from non-Christian populations, the measures designed to test concurrent validity should have some history with the population in question. For instance, while lower levels of substance use/abuse correlates positively with religiosity among Christian samples, some forms of spirituality may exhibit no correlation or even a negative correlation (Gorsuch, 1995).

LIMITATIONS

As is the case with other instruments developed with college samples, it is important to note such samples are not reflective of the general population, particularly in the area of age. However, concerns about the sample would seem to be alleviated by the fact that Allport and Ross (1967) validated their measure of intrinsic religion with a similar sample of students. Since Allport and Ross' original measure of intrinsic re-

ligion has been demonstrated to be valid and reliable with a wide variety of samples (Burris, 1999; Gorsuch et al., 1997; Mytko & Knight, 1999; Wulff, 1997), it is highly plausible that the new measure of intrinsic spirituality will show comparable results with other samples. Nevertheless, as mentioned above, further research needs to be conducted to confirm this hypothesis.

A more serious limitation may be the relatively high level of reading ability required by some of the items. Similarly concerns have been directed at Allport and Ross' (1967) original measure (Burris, 1999). Concepts such as "master motive," for instance, may be difficult for some individuals to understand, in spite of the fact that some attempt is made to explain the concept in the scale itself. This may limit the scale's use with certain populations. It is important to note, however, that the respondents in the study seemed to have little problem comprehending the instructions or completing the items. Future researchers, however, may wish to explore the possibility of using less complex wording.

Additional limitations are associated with the sample size. While opinions differ, Schumacker and Lomax (1996) suggest a total sample of 100 to 150, in conjunction with a ratio of 10 subjects per variable, represents the minimum satisfactory sample size. While the sample used in this study meets these criteria, some may consider the sample to be small. Type I errors may also have occurred as a series of models were tested. Unfortunately, the size of the sample prevents the sample from being randomly split into a specification and a validation group.

CONCLUSION

Building upon established academic work, this paper has modified the most prominent measure in the psychology of religion, Allport and Ross' (1967) measure of intrinsic religion, to tap spirituality. The new, six-item intrinsic spirituality measure demonstrates good validity and high reliability. It provides social workers and other social scientists with an instrument to assess the degree to which spirituality operates as a motivational influence in respondents' lives. It is designed to measure spirituality in both theistic and non-theistic populations regardless of whether respondents express their spirituality within or outside of religious frameworks.

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