Psychology of Addictive Behaviors
2004, Vol. 18, No. 3, 213–222

0893-164X/04/$12.00 DOI: 10.1037/0893-164X.18.3.213

Spiritual Transcendence as a Predictor of Psychosocial Outcome From an Outpatient Substance Abuse Program

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Does the Spiritual Transcendence Scale (STS; R. L. Piedmont, 1999) predict psychosocial outcomes from an outpatient substance abuse program? Self-report data on symptoms, personality, and coping resources were obtained for 73 consecutive admissions (57 men and 16 women; ages 19–66 years) at intake and again from the 56 (47 men and 9 women) who completed treatment. Controlling for relevant demographic variables, pretreatment STS scores were significantly related to self-ratings at posttreatment. The STS predicted treatment outcomes over and above the contribution of the five-factor model of personality. Significant partial correlations between pretreatment STS scores and therapist ratings of treatment outcome were also obtained. Spiritual Transcendence, especially the facets of Universality and Connectedness, appears to play a significant role in substance abuse recovery.

Spirituality continues to receive an increasing amount of attention and scientific scrutiny in the social and physical sciences. This growing professional attention reflects the popular interest in spiritual issues and the possible role that spirituality can play in moderating physical and mental health problems. Surveys in the popular news media indicate that nearly 80% of Americans believe in the power of prayer to improve the course of illness (Wallis, 1996). Professional health care workers also believe in the power of spirituality to influence the process of recovery from chronic illnesses and to influence the course of medical and psychological interventions (Feher & Maly, 1999; Kirkpatrick & McCullough, 1999; Rose, 1999). This belief in the power of spirituality to affect illness is clearly seen in the treatment for chemical dependency (Borman & Dixon, 1998; Green, Fullilove, & Fullilove, 1998; Warfield & Goldstein, 1996), where not only is spirituality perceived as "the" curative factor in substance abuse treatment (Alcoholics Anonymous's [AA's] "Big Book" describes its program as one of "spiritual awakening" [AA World Services, Inc., 1976, p. 60]), but also spiritually based programs, like AA, are associated with effective treatment outcomes for alcoholism (Gorski & Miller, 1986; Montgomery, Miller, & Tonigan, 1995; Project MATCH Research Group, 1997). However, it is not yet understood how and in what ways spirituality affects individuals so as to promote positive change (Pardini, Plante, Sherman, & Stump, 2000; Peteet, 1993). The purpose of this article is to present the construct of spiritual transcendence from an empirical and theoretical perspective and to demonstrate its psychological value as a potent predictor of outcome in the treatment of substance abuse.

Spirituality in a Substance Abuse Context

Before beginning this discussion, a distinction needs to be made between the concepts of *spirituality* and *religiosity*. Certainly these two constructs share much in common, and some researchers prefer to interpret these two dimensions as being quite similar (e.g., Larson, Swyers, & McCullough, 1998; Zinnbauer, Pargament, & Scott, 1999). Nonetheless, there are important conceptual and empirical differences between them that need to be appreciated (Piedmont, 2002; Piedmont & Leach, 2002; Rayburn, 1996). According to Miller and Thoresen (1999), *spirituality* is an attribute of an individual (much like a personality construct), whereas *religiosity* encompasses more of the beliefs, rituals, and practices of an institutional nature (p. 6). Religiosity is concerned with how one's experience of a transcendent being is shaped by, and expressed in, a community or social organization. Spirituality, on the other hand, is most concerned with one's personal relationships to larger, transcendent realities, such as God or the universe. Recognizing the existence of a larger context for meaning seems to have a beneficial impact on one's sense of personal health and well-being (Donahue & Benson, 1995; Koenig, George, & Peterson, 1998). The importance of spirituality is perhaps most clearly evidenced in the lives of substance abusers, who, as Prezioso (1987) suggested, experience a negative spirituality that creates feelings of insecurity, defensiveness, and low self-esteem (see also Warfield & Goldstein, 1996).

According to AA, alcoholics suffer from "character defects" (AA World Services, Inc., 1976, p. 59) that create pathological narcissism; alcoholics may be so self-absorbed that they have

Support for the writing of this article was obtained from the Institute for Religious and Psychological Research. I acknowledge the efforts of the Cathedral House Re-Entry Program clinical staff, especially Thomas Trigg, whose efforts in data collection and treatment implementation made all of this possible. I thank Lynn Davies and John Allen for their comments on a draft of this article. Portions of this article were presented at the 2001 annual meeting of the Eastern Psychological Association, Washington, DC.

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difficulty constructing meaningful, emotionally satisfying relationships with others. The value of the AA program lies in its capacity "to move a person from a less mature, childish, self-centeredness toward a more mature form of object love" (Khantzian & Mack, 1989, p. 79). A positive spirituality helps alcoholics shift from a narcissistic focus to an acknowledgment of the larger dimensions of their lives. Although the specific elements of this transition are not well understood (see Pardini et al., 2000, and Peteet, 1993, for some speculations), spirituality clearly plays a part in successful outcomes (Pardini et al., 2000).

Although expectations of this positive impact are conceptually grounded (e.g., Peteet, 1993; Tournier, 1979; Warfield & Goldstein, 1996), spiritual constructs have not yet been linked to therapeutic outcomes with substantive data (Booth & Martin, 1998). For example, Pardini et al. (2000) showed that a general measure of spirituality correlated with important clinical measures, such as perceived social support, hardiness, and optimism, in a group of substance abusers. Reinert, Estadt, Fenzel, Allen, and Gilroy (1995) showed that higher levels of spiritual surrender were observed in individuals highly involved in the AA program in comparison to a sample of Rational Recovery clients. Mathew, Georgi, Wilson, and Mathew (1996) showed significant increases in a measure of spirituality after recovery from substance abuse. All of these studies, however, like the majority of those reported in the literature, are cross-sectional in nature and did not examine the predictive effects of spirituality on treatment outcome. Thus, it is not known whether spirituality's relatedness to these clinical variables is simply a by-product of the recovery process or whether spirituality has an independent, clinically predictive value in its own right. Two major issues impede research on this topic: (a) the skepticism that exists between mental health professionals and practitioners of spiritually oriented programs and (b) the prevalence of many poor-quality measures of spirituality. Mistrust among professionals is quickly melting away, given the pervasiveness of 12-step and related spiritually based programs in the treatment of addictive disorders of all types (Tonigan, Toscova, & Connors, 1999); however, issues concerning the conceptualization and measurement of spirituality, and the psychometric integrity of such measures, continue to hinder progress in this field (Gorsuch, 1984, 1990). In the next section I examine these issues.

Measuring Spirituality

A wellspring of research has aimed at developing measures that capture salient aspects of spirituality (see Hill & Hood, 1999, for a compendium of such measures); however, the presence of so many measures has generated three important concerns for the field. First, there is the question of conceptual redundancy. To what degree do these putatively independent measures capture truly distinct aspects of the individual? To the extent to which they are simply the reiterations of a common construct, the field will suffer under the burdens of excessive terminology and conceptual disarray (Gorsuch, 1990; Pardini, Plante, Sherman, & Stump, 2000; Piedmont, 2001). Second, the psychometric integrity of these scales is weak, and many lack evidence of construct validity (Gorsuch, 1988; Hall, Tisdale, & Brokaw, 1994). Finally, one must determine whether these constructs represent new aspects of psychological functioning or simply repackage already-established individual-difference variables (Piedmont, 1999). Van Wicklin (1990) questioned whether spiritual measures were only the "religification" of existing personality constructs. In short, what added value does spirituality bring to the discipline?

To address these issues, I have taken a motivational/trait approach to conceptualizing spirituality. 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 that impels individuals toward identifiable goals (Emmons, 1999). Spirituality would operate in ways consistent with other motivational traits, such as power, affiliation, and achievement. Such an approach also provides for a very clear measurement model that is conducive to empirical analysis.

I defined *spirituality* as an individual's efforts to construe a broad sense of personal meaning within an eschatological context (Piedmont, 2001). This means that humans are the only creatures apparently aware of their own mortality. Within that reality, each of us must construct some sense of purpose and meaning in life. We might be asking "Why am I here? What purpose does my life serve? Why should I do the things I do?" Our responses to these questions set the tempo, tone, and direction for our lives. These answers help to pull together the many disparate threads of existence into a more meaningful coherence that gives us the will to live productively (Frankl, 1966). Managing our sense of mortality is an innate task for our species and explains why spirituality is seen by many as the central organizing aspect of personality (Allport, 1950; Bateson, Schoenrade, & Vensu, 1992; Frankl, 1959). A spiritual orientation develops when these answers also lead us to develop a sense of spiritual transcendence, or a

> capacity of individuals to stand outside of their immediate sense of time and place and to view life from a larger, more objective perspective. This transcendent perspective is one in which a person sees a fundamental unity underlying the diverse strivings of nature. (Piedmont, 1999, p. 988)

The Spiritual Transcendence Scale (STS) was developed to operationalize this construct (see Piedmont, 1999, for a complete description of methods and findings). The items constituting the STS were analyzed within the context of the five-factor model of personality (Digman, 1990; McCrae & John, 1992) and were shown to constitute an independent individual-differences dimension. The STS manifested a single overall factor composed of three "facet" scales: (a) *Prayer Fulfillment*, a feeling of joy and contentment that results from personal encounters with a transcendent reality (e.g., "I find inner strength and/or peace from my prayers or meditations"); (b) *Universality*, a belief in the unitive nature of life (e.g., "I feel that on a higher level all of us share a common bond"); and (c) *Connectedness*, a belief that one is part of a larger human reality that cuts across generations and across groups (e.g., "I am concerned about those who will come after me in life").

The structure of the STS was found to be stable over several samples of mostly college students (Piedmont, 1999, 2001). This structure includes three correlated first-order factors that load on a

single second-order dimension.[1] Self-reported scores on the STS were shown to converge significantly with observer ratings on the STS. Such consensual validity indicated that Spiritual Transcendence is not a solipsistic quality existing only in the mind of the individual; rather, qualities of transcendence represent a relatively pervasive aspect of human psychological functioning, sufficiently manifest and distinct so as to be recognizable in one's behavior by others. The STS not only correlated with a variety of religious and spiritual variables but also evidenced incremental validity by significantly predicting a number of relevant psychological outcomes (e.g., stress experience, social support, interpersonal style, prosocial behavior, psychological growth) even after the predictive effects of personality were removed. Piedmont and Leach (2002) showed the STS to be reliable and valid in an Indian sample of Hindus, Muslims, and Christians; their study provides support for the STS as a measure of those fundamental aspects of spirituality that cut across both culture and religious orientation. Bartlett, Piedmont, Bilderback, Matsumoto, and Bathon (2003) demonstrated the utility of the STS in predicting well-being among a medical sample of chronic arthritis sufferers. This series of studies provides strong support for the belief that spirituality can be construed as a broad source of intrinsic motivation that is independent of existing personality constructs. Furthermore, the STS is a psychometrically stable instrument that can be useful in capturing these spiritual motivations (for a review of the STS, see Slater, Hall, & Edwards, 2001).

The STS appears to be an ideal instrument for use in a clinical substance abuse sample. It has the potential to serve as both an index of change over the course of treatment and as a predictor of outcome. Its multifaceted structure can provide insight into those aspects of spirituality that are influenced by spiritually oriented programs such as AA. It also can identify those spiritual qualities that may be responsible for producing change. Furthermore, its nondenominational nature parallels the nonsectarian orientation of 12-step programs (Chappel, 1990). The research literature quite clearly acknowledges the need for an instrument such as the STS (e.g., Booth & Martin, 1998; Miller & Thoresen, 1999; Pardini et al., 2001; Peteet, 1993) to accomplish exactly these types of empirical goals. The aim of this study was to determine the ability of the STS to meet these needs. The following six questions were addressed: (a) Is the STS reliable and valid in a clinical sample? (b) Do scores on the scale significantly change over the course of a treatment program that is spirituality based? (c) Do the scales of the STS measured at pretreatment correlate significantly with posttreatment ratings of psychological distress, coping ability, and well-being? (d) Do these cross-time associations remain significant even after the predictive effects of personality are controlled? (e) Do pretreatment scores on the STS correlate with counselor ratings of treatment progress obtained at posttreatment? (f) Does the pattern of correlations between the STS and the various outcome ratings provide information about which aspects of spirituality may be operating to produce therapeutic change?

Method

Participants

Participants were 57 men and 16 women, ages 19 to 66 ($M = 41$), who were consecutively admitted to an 8-week outpatient drug rehabilitation program between January 2000 and December 2000. Most had a high school diploma, and approximately 85% were African American, 14% were Caucasian, and 1% were Asian. Concerning religious affiliation, 44% were Baptist, 21% were Roman Catholic, 8% were Methodist, 3% were Episcopalian, 9% were "other Christian," 6% were Muslim, and 9% indicated "other." The majority of participants were single ($N = 33$) or divorced ($N = 26$), 1 was widowed, and 3 were married (10 did not indicate a marital status). Most indicated alcohol (89%), marijuana (76%), cocaine (73%), and heroin (63%) as the substances most frequently abused on a weekly or daily basis. On average, clients had completed three previous, medically supervised detoxifications and had been in two previous rehabilitation programs. All members of the program were volunteers, having been recommended by local shelters and social agencies. To be accepted into the program, an individual had to have been drug free at least 30 days. Use of substances during the program was grounds for immediate dismissal. Although the program itself did not conduct any drug screening, such procedures were carried out by the shelters in which clients were staying. On average, participants had been unemployed for 19 months (range = 1 month–8+ years) and had experienced their last detoxification 6 months prior to beginning the program. Twenty-seven percent were on probation or parole at the time of entrance.

Of the 73 individuals who began the program, 56 (47 men and 9 women) successfully completed it. An analysis of those who dropped out indicated that they were significantly younger than completers (36 years vs. 43 years), $t(71) = 2.61$, $p < .01$, and were more likely to be women, $\chi^2(1, N = 73) = 4.8$, $p < .05$. The two groups did not differ in terms of overall levels of Spiritual Transcendence, $t(71) = 1.84$, *ns*. Of the individuals who left the program, 1 had relapsed, 6 had found jobs, and the remaining 11 gave no explanation for their early termination. The treatment completers constituted the posttreatment sample.

Measures

NEO Personality Inventory—Revised. The NEO Personality Inventory—Revised (NEO–PI–R; Costa & McCrae, 1992) is a 240-item questionnaire that was developed through rational and factor analytic methods to measure the domains of the five-factor model of personality. Items are answered on 5-point scales with response alternatives that range from 1 (*strongly agree*) to 5 (*strongly disagree*). Scales are balanced to control for the effects of acquiescence. Coefficient alphas for the five domains in this sample ranged from .86 for Openness to .91 for Neuroticism. The scales of the NEO–PI–R have shown evidence of convergent and discriminant

[1] A distinction needs to be made between a *multidimensional* scale versus a *multifaceted* scale. A multidimensional scale is one that contains several, independent dimensions. Scores on one of these dimensions do not correlate with scores on any other. Information contained across these dimensions is nonredundant. A multifaceted scale, on the other hand, is one that contains multiple dimensions that are all correlated to some degree. This overlap exists because the dimensions are all emerging from a common latent construct. Multidimensional scales provide breadth of coverage, whereas multifaceted scales provide greater fidelity of assessment for a single domain. A good example of these two types of scales is the NEO–PI–R (Costa & McCrae, 1992). This scale is multidimensional because it assesses the five independent dimensions of personality. It provides comprehensive coverage of the field of traditionally defined personality constructs. It is also a multifaceted instrument, because within each personality dimension there are six specific "facet" scales (or subscales) that capture discrete aspects of this larger domain. All six facets are highly correlated and constitute a single overall dimension. However, they each possess sufficient unique variance to warrant separate interpretations. The STS captures a single overall dimension, but it is broken down into three facets that help to better articulate aspects of this unitary construct.

validity across instruments, methods, and observers and have been related to a number of life outcomes, including frequency of somatic complaints, ability to cope with stress, burnout, and occupational success (Costa & McCrae, 1989; Piedmont, 1993).

STS. Developed by me (Piedmont, 1999), this 24-item scale consists of three subscales: Universality, Prayer Fulfillment, and Connectedness. Items are answered on a Likert-type scale that ranges from 1 (*strongly agree*) to 5 (*strongly disagree*). These scales have been shown to have acceptable reliabilities (.83, .87, and .64 for Universality, Prayer Fulfillment, and Connectedness, respectively; Piedmont, 1999). Items are balanced to control for response acquiescence. Scores on these scales have also been shown to predict a variety of related spiritual constructs and a number of psychologically salient outcomes (e.g., stress experience, well-being, self-actualization, and attitudes toward sexuality; Piedmont, 1999, 2001).

Brief Symptom Inventory. Developed by Derogatis (1993), this 53-item self-report instrument is designed to assess psychological symptom patterns over nine primary clinically relevant dimensions and three global indices. Each item is rated on a 4-point Likert scale that ranges from 0 (*not at all*) to 4 (*extremely*). For the purpose of this study, only one global scale—the Global Severity Index, which is the sum of the nine symptom clusters divided by the total number of responses—was used. Alpha reliability for the Global Severity Index in this sample was .98. Research has demonstrated that the scales of the Brief Symptom Inventory converge with other clinical measures, and scores have been shown to be useful in detecting symptomological distress in clients in a drug treatment context (Buckner & Mandell, 1990; Derogatis, Rickels, & Rock, 1976; Royse & Drude, 1984). In accordance with guidelines provided in the manual, scores from participants in this study were evaluated relative to norms provided for the adult nonpatient sample.

Coping Resources Inventory. The Coping Resources Inventory (CRI; Hammer & Marting, 1988) is a 60-item questionnaire that attempts to identify resources currently available to individuals for managing stress. Items are rated on a 4-point Likert type scale that ranges from 1 (*never or rarely*) to 4 (*always or almost always*). There are six scales: (a) Cognitive (the degree to which an individual maintains a positive sense of self-worth and an optimistic view of life in general), (b) Social (the degree to which an individual is embedded in social networks that are able to provide support), (c) Emotional (the degree to which an individual can accept and express a range of affect), (d) Spiritual/Philosophical (the degree to which the actions of a person are guided by stable and consistent values derived from religious, familial, or cultural traditions), (e) Physical (the extent to which an individual enacts health-promoting behaviors believed to contribute to increased physical well-being), and (f) Total (the aggregated score over the previous five scales, which provides a global index of the overall number of resources an individual has available in times of stress). The scale also asks respondents to rate on a 4-point Likert-type scale the amount of stress he or she is currently experiencing (labeled here as *self-rating of stress*). This single self-rating of stress was also included in this study. Alpha reliabilities for the scales were all within acceptable limits in this sample (range: .55 for Physical to .90 for Total). Scores on the CRI have been longitudinally linked to the number of physical and psychological symptoms associated with stress (Elkind, 1981). Piedmont and Ciarrocchi (1999) showed that the CRI correlates with the dimensions of the five-factor model in theoretically consistent ways in a similar sample of substance abusers. The manual provides additional validity information, showing the CRI to be related to diverse outcome measures of stress and coping.

Bradburn Affect Balance Scale. Developed by Bradburn (1969), this 20-item true–false scale captures the dimensions of Positive Affect and Negative Affect (NAS). Studies have shown that the Positive Affect and NAS scales represent independent dimensions (Bradburn, 1969; Costa & McCrae, 1980). Scores on these scales have been shown to correlate with ratings of global happiness (Lowenthal, Thurner, & Chiriboga, 1975) and well-being (Costa & McCrae, 1984). The Bradburn Affect Balance Scale was completed at pretreatment. For the purposes of this study, the NAS scale was used as a covariate to control for overall levels of affective distress in examining the relations between the STS and various treatment outcomes.

Evaluation of treatment efficacy. At the end of treatment, two counselors completed an outcome evaluation of each client. The form they used was developed in conjunction with the program staff and listed 13 clinically relevant outcome items. Staff rated each item on a 7-point Likert-type scale, indicating the degree to which the client showed improvement. Counselors were master's- and doctoral-level clinicians who were involved in the participants' treatment. Two counselor ratings were obtained for each client. The list of these outcome dimensions is given in the Results section. The reliabilities for these single item ratings ranged from .57 (Item 10) to .76 (Item 9), with a median of .65 (see Rosenthal & Rosnow, 1984, pp. 164–165).

Global Well-Being Scale. This single-item index of overall life satisfaction was developed by Andrews and Withey (1976). Individuals rate on a Likert-type scale that ranges from 1 (*terrible*) to 7 (*delighted*) the degree to which they are satisfied with their total life situation. This scale has been shown to be a useful overall index of well-being that includes both affective and cognitive components. Previous research has shown that this criterion is a relevant outcome for evaluating the effects of spirituality (e.g., Piedmont, 2001).

Procedure

Before beginning the treatment program, all clients met with a counselor for a 20- to 40-min interview, which was designed to evaluate the level of impairment and the suitability of each client.

Within 1 week of the program's conclusion, ratings were obtained from counselors on the outcome questionnaire. Thirty-five clients received two counselor ratings, and 21 received only a single rating. Counselor ratings were aggregated to create a composite score. Counselors did not have access to clients' responses on any of the self-report forms before making their own assessments.

After being interviewed, clients completed the NEO–PI–R, the CRI, the BSI, a demographic questionnaire, and the STS. This was accomplished in one sitting, either after their interview with a counselor or on the first day of the program. Clients were told that the purpose of the assessments was for program evaluation purposes only and signed a consent-for-assessment form. During their last week in the program, clients again completed the questionnaires.

The program itself lasted 8 weeks. Clients attended it 5 days a week, 6 to 8 hr/day. The program regimen was characterized as a broad-based, multimodal intervention. The major goals of the program were to develop useful vocational skills and to assist participants in finding gainful employment by the end of treatment. In addition, participants received individual and group counseling; attended AA/Chemical Dependence Anonymous groups; and engaged in a number of therapeutic activities centering on personal, physical, and spiritual growth and development.

Results

Descriptive statistics and reliability estimates for the STS in this clinical sample are presented in Table 1. There are four points of interest here. First, mean levels are comparable to normative values presented by Piedmont (2001) for a sample of undergraduate students, although standard deviations are somewhat smaller here. Second, all scales, except Time 1 Connectedness, show alpha reliability estimates similar to normative values. The lack of any internal consistency for Time 1 Connectedness suggests that cli-

Table 1
Descriptive Statistics and Reliabilities for the Spiritual Transcendence Scale (STS) at Pre- and Posttreatment Assessment Intervals

STS subscale	Time 1[a] $N = 73$ M	SD	p	Time 1[a] $N = 56$ M	SD	p	Time 2 ($N = 56$) M	SD	p	t ($N = 56$)	Cohen's d	Retest r
Universality	33.90	5.4	.84	34.48	5.6	.87	35.86	5.3	.83	−2.71**	.25	.76***
Prayer Fulfillment	29.63	4.4	.65	29.96	4.5	.62	32.36	3.9	.68	−4.36**	.56	.53***
Connectedness	21.59	2.6	.11	21.79	2.7	.13	22.59	3.4	.55	−1.75	.26	.39**
Total score	85.12	9.5	.80	86.23	10.0	.81	90.80	10.5	.84	−3.85**	.44	.63***

[a] Means are presented for the overall sample and for participants involved in the cross-interval assessment.
** $p < .01$. *** $p < .001$.

ents entering the program may have no cohesive sense of these items' meaning relative to the construct being assessed. It is interesting that the items on the Connectedness scale correlated with the other items on the STS (mean corrected item–total correlation with the total scale score = .19), enabling the total scale to have a relatively high overall reliability. Third, all scales indicated significant levels of consistency over time, suggesting that the constructs measured by the STS were stable over the 8 weeks. Finally, a multivariate analysis of variance using the three STS subscales as dependent variables revealed significant overall changes in levels of spiritual transcendence over time (Wilks's $\Lambda = .74$), multivariate $F(3, 54) = 6.26$, $p < .001$. Univariate analyses showed changes on all but the Connectedness scale over the course of treatment. These increases indicate that clients assumed a more transpersonal orientation to their world. The overall effect size for this change was moderate in size (Cohen's $d = .44$).

To examine the extent of observed change on the self-rated outcome dimensions, I conducted a repeated measures multivariate analysis of variance. A significant overall within-subjects effect emerged (Wilks's $\Lambda = .49$), multivariate $F(9, 31) = 3.61$, $p < .005$, indicating significant change on these dimensions over the course of treatment. (The Total Coping Resources measure was not included in this analysis because it is a linear combination of the other five subscales. A separate repeated measures analysis of variance was conducted that also yielded a significant effect, $F[1, 54] = 15.66$, $p < .001$.) The univariate descriptive statistics, t values, and effect size estimates are provided in Table 2. As can be seen, there was significant change on all but one of the outcome dimensions (self-ratings of stress). It is clear that there was significant improvement over the course of treatment (mean Cohen's $d = .50$). In the following analyses I examined the extent to which the STS was able to predict this change.

The first step in this process was to conduct a canonical correlation analysis linking the three subscales of the STS with the eight predictors listed in Table 2 (Total Coping Resources was again not included because it is a linear combination of the five subscales). Given the number of variables involved and the relatively small sample size, this analysis provides protection against inflated experimentwise alpha levels leading to Type I errors. This omnibus test indicated a significant relationship between these two sets of variables (Wilks's $\Lambda = .30$), multivariate $F(24, 105.01) = 2.24$, $p < .005$. To understand the pattern of relationships, in Table 3, I present the partial correlations between pretreatment STS scores and posttreatment self-reported scores on the BSI and CRI, con-

Table 2
Descriptive Statistics and t Values for the Self-Rated Outcome Variables at Pre- and Postassessment Intervals

Outcome variable	Time 1 M	SD	Time 2 M	SD	t	Cohen's d
Self GSI[a]	73.89	21.2	61.68	19.2	3.96***	.60
Coping Resources Inventory[b]						
Cognitive	42.49	10.0	48.36	9.5	−3.96***	.60
Social	43.28	7.2	46.90	8.2	−2.84**	.47
Emotional	41.73	8.9	46.38	9.1	−3.70***	.52
Spiritual	47.08	6.9	50.41	8.0	−3.06**	.44
Physical	43.23	7.2	45.51	8.4	−2.02*	.29
Total Coping Resources	41.29	8.3	46.56	9.1	−3.96***	.60
Self-rating of stress	2.07	0.6	1.91	0.7	1.74	.25
Global well-being	4.02	1.3	5.06	1.4	−4.88***	.77

Note. $N = 55$, except for self-rating of stress ($N = 43$) and overall well-being ($N = 52$).
[a] Brief Symptom Inventory, Global Severity Index. [b] Self-reported score on the Coping Resources Inventory.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3
Partial Correlations Between Time 1 Spiritual Transcendence Scale (STS) Scores and Time 2 Outcome Scores, Controlling for Age, Gender, Marital Status, and Overall Negative Affect

	Time 1 STS			
Time 2 outcome variables	Universality	Prayer Fulfillment	Connectedness	Total score
Self GSI[a]	.02	−.05	.29*	.07
Coping Resources Inventory[b]				
Cognitive	.39**	.43**	.15	.46***
Social	.45**	.38**	.32*	.52***
Emotional	.35**	.37**	.30*	.45***
Spiritual	.43**	.51***	.13	.52***
Physical	.06	.28*	−.14	.13
Total Coping Resources	.44***	.52***	.22	.55***
Self-rating of stress	−.37**	.00	−.03	−.22
Global well-being	.25	.31*	.01	.28*

Note. $N = 48$.
[a] Brief Symptom Inventory, Global Severity Index. [b] Self-reported score on the Coping Resources Inventory.
* $p < .05$. ** $p < .01$. *** $p < .001$.

trolling for gender, age, overall negative affect (the NAS scale), and marital status (which I dummy coded into the three categories of single, divorced, and "other"). STS scores obtained at pretreatment correlated significantly with measures of coping ability, symptom experience, and well-being ratings generated by clients at posttreatment. These significant cross-method, cross-time correlations suggest that levels of spirituality were important predictors of treatment outcome on a number of clinically salient dimensions. In all instances, higher levels of Spiritual Transcendence were associated with more favorable outcomes on the symptom and coping indices.

To demonstrate that the associations between spiritual measures and psychosocial outcomes were the result of spirituality's unique association with these variables and not an artifact of spirituality's overlap with established individual-difference constructs that are themselves highly related to these outcomes, I conducted a series of hierarchical multiple regression analyses. Each of the posttreatment variables were used as dependent variables. At Step 1, the demographic variables of gender, age, and marital status (again dummy coded) were entered. Overall negative affect was not included, because a global measure of Neuroticism was entered on the following step. At Step 2, the pretreatment personality domain scores of the NEO–PI–R were entered. At Step 3, using a forward entry procedure, the three STS facet scales were entered (note that the total STS score was not included in these analyses). A partial F test evaluated whether the STS scales that entered the equation explained a significant amount of additional variance over the personality and demographic variables. The results of these analyses are presented in Table 4. In all but two instances the pretreatment STS scales provided additional significant explanatory variance, showing spirituality's unique relatedness to these psychosocial criteria.

Table 4
Incremental Validity of the Spiritual Transcendence Scale (STS) in Predicting Time 2 Outcomes Over Demographic Characteristics and the Five-Factor Model (FFM) Personality Domains

Time 2 outcome variable	Demographics R^2[a]	FFM R^2	STS R^2	Subscale	Partial F
Self GSI[b]	.12	.13	.00		
Coping Resources Inventory[c]					
Cognitive	.20	.16	.11	Univ.	9.22**
Social	.17	.09	.14	Univ.	10.03**
Emotional	.15	.05	.10	Univ.	6.38*
Spiritual	.08	.09	.29	Univ. & Fulfil.	11.34**
Physical	.07	.19	.00		
Total Coping Resources	.17	.11	.25	Univ. & Fulfil.	11.56**
Self-rating of stress	.08	.07	.13	Univ.	6.90**
Global well-being	.09	.09	.15	Univ.	9.58**

Note. $N = 56$. Univ. = STS Universality facet; Fulfil. = STS Prayer Fulfillment facet. FFM represents the personality dimensions of Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness.
[a] Demographics include age, gender, and marital status, which was dummy coded to reflect the categories of single, divorced, and other. [b] Brief Symptom Inventory, Global Severity Index. [c] Self-reported score on the Coping Resources Inventory.
* $p < .05$. ** $p < .01$.

The partial correlations between pretreatment STS scores and aggregated counselor ratings obtained at the end of treatment, again controlling for age, gender, marital status, and overall negative affect (the NAS scale), are presented in Table 5. There were numerous associations, particularly for the Connectedness scale. Counselor perceptions of clients' approach to treatment, as well as the perceived effort expended throughout the program, were clearly related to their initial spiritual orientation. It is interesting to note that Prayer Fulfillment failed to correlate with these ratings, suggesting that levels of contentment arising from one's personal encounters with the sacred say little about counselor ratings of treatment outcome. Rather, a sense of Universality and Connectedness, perceptions of the harmony and unitive nature of the world, as well as some sense of one's clear placement in that process, do seem to have positive therapeutic implications.

Discussion

These results provide proof of additional construct validity of the STS scales and support for their use in a substance abuse context. The STS scales were significant predictors of psychosocial outcomes, especially coping ability, even after the predictive effects of personality were controlled. The cross-time, cross-method, cross-observer correlations between pretreatment STS scales and posttreatment counselor ratings of psychological distress provide evidence for the predictive validity of the STS. The fact that scores on the STS changed significantly over the course of treatment suggests that the measure could be a useful index of therapeutic impact in substance abuse programs. These data are consistent with the view that spirituality is an important psychological dimension of the individual. As a unique dimension, spirituality provides insights into functioning that are nonredundant with extant measures of personality.

If indeed spirituality represents a sixth dimension of personality (see MacDonald, 2000; Piedmont, 2001; Saucier & Goldberg, 1998), then any discussion of the role of personality in explaining human motivation, and the goals we seek to gratify, must include spirituality. Spirituality continues to be a salient aspect of human psychological functioning (see Emmons & Paloutzian, 2003) and, as such, psychologists need to include this construct if they wish for their models and assessment paradigms to be comprehensive and ecologically valid. Spirituality brings a novel element to the field of psychology in its focus on how individuals construct meaning and create a sense of unity among the many competing and conflicting forces that affect their lives. Committing to this larger vision allows individuals to find personal stability and coherence, even during times of fluidity and disjuncture. For recovering individuals, this broader meaning may provide ways of coping with stressful events (e.g., Corrington, 1989) or creating

Table 5
Partial Correlations Between Time 1 Spiritual Transcendence Scale (STS) Scores and Counselor Ratings of Treatment Success at Time 2, Controlling for Gender, Marital Status, and Overall Negative Affect

Outcome rating[a]	STS subscale			
	Universality	Prayer Fulfillment	Connectedness	Total score
1. Client's attitude towards program: 1 = *very little acceptance*, 7 = *very much accepting*	.16	−.01	.29*	.17
2. Client's efforts in treatment: 1 = *very little effort*, 7 = *very diligent effort*	.24	−.05	.28*	.19
3. How successfully were treatment goals reached? 1 = *not successful*, 7 = *fully successful*	.28*	.00	.35**	.26*
4. What degree of recovery was noted? 1 = *likely to relapse*, 7 = *likely to stay clean*	.21	.06	.36**	.25
5. Spiritual development: 1 = *rigid*, 7 = *flexibile*	.20	.07	.28*	.22
6. What was the client's attitude towards the vocational training? 1 = *resistive*, 7 = *proactive*	−.01	−.07	.03	−.03
7. How well did the client learn the job searching techniques? 1 = *not well*, 7 = *very well*	.04	−.02	.05	.02
8. Overall, how much personal growth did this person experience? 1 = *not much growth*, 7 = *a lot of growth*	.19	−.01	.27*	.18
9. Please rate the client's motivation to want to make a change in their lifestyle: 1 = *very little motivation*, 7 = *very high motivation*	.19	−.02	.35**	.19
10. Please rate the degree to which you believe the client CAN make a change in his/her lifestyle: 1 = *unable to make personal change*, 7 = *very capable of making personal change*	.23	.01	.34*	.23
11. Please rate the degree to which you believe the client can maintain any change in lifestyle: 1 = *unable to maintain*, 7 = *no difficulty in maintaining any changes*	.16	−.03	.33*	.17
12. To what degree do you feel that the client has embraced the idea of work as a career? 1 = *not at all*, 7 = *very much so*	.22	−.01	.22	.18
13. How likely do you think the client will be able to keep his/her initial job? 1 = *not at all*, 7 = *very likely*	.26*	.11	.33*	.30*

Note. $N = 50$.
[a] Counselor ratings are based on aggregated scores across two counselors.
* $p < .05$. ** $p < .01$.

buffers against negative feelings (e.g., Warfield & Goldstein, 1996). It may also represent a higher level of personal maturity (Khantzian & Mack, 1989).

Substance abusers may find themselves locked into their own narrow worlds of emotional pain, personal ineptitude, and interpersonal inadequacy. Burdened under the weight of their perceived failings, and unable to find escape from their faults and pain, they create for themselves a very constricted and limited world. Spirituality's therapeutic effect may be in its ability to reintroduce substance abusers as meaningful players in the larger human polity. Spirituality stresses the value of people despite their brokenness; it emphasizes the importance of each person's life in maintaining the integrity of the fabric of human experience. The fact that the Universality scale was the dominant predictor of treatment outcome supports the view that this program helped clients to recognize their membership, their unique place and purpose, in a larger social reality.

This finding raises some interesting hypotheses about what may be occurring therapeutically to clients in treatment. Universality reflects the belief that there is a higher level of existence through which all of life is interconnected. This scale conveys the idea that individuals are part of a larger social reality, a community of "oneness" that transcends the many differences we experience in this life. Clients who scored higher on this scale at the beginning of treatment exhibited better outcomes than those who scored lower. This notion of community appears to be very relevant in the successful treatment of substance abusers. Perhaps learning about universality counteracts the narcissism that is so often characteristic of the substance abuser and provides a guideline for how to live an emotionally fulfilling life.

It is surprising that the low alpha reliability of pretreatment scores on the Connectedness scale did not compromise its ability to be a significant predictor of counselor ratings of treatment outcome. Rather than being a disorganized construct, scores on this scale may represent what Bollen and Lennox (1991) referred to as *causal indicators* of treatment responsiveness. Causal indicators are observed variables that influence latent constructs and, as such, do not need to be internally consistent. Items such as "It is important for me to give something back to my community"; "I am concerned about those who will come after me in life"; and "Although there is good and bad in people, I believe that humanity as a whole is basically good" reflect an attitude that a person believes him- or herself to be an important member of a broader social community and is emotionally invested in supporting its future. Such generative beliefs may provide a motivation for the client to accept and comply with treatment strategies and goals.

These findings certainly need to be replicated, but they are significant because they provide a point of departure for understanding why spirituality is important in the recovery process. As Pardini et al. (2000) pointed out, there are virtually no empirical studies that have examined how spirituality assists in substance abuse treatment. Thus, these results are a first approximation in addressing this issue. The hypothesized psychological roles of universality and connectedness are consistent with current theories on why individuals come to abuse drugs and may provide mechanisms by which future interventions can be developed, focusing specifically on these aspects of functioning. Would such treatment approaches be more efficacious? Are those who develop a stronger sense of universality less likely to recidivate?

Future research must begin to develop interventions that are specifically tailored to access the spiritual qualities of the individual. At present, there are intervention strategies that focus on interpersonal skills, personal organization, empathy, and emotional dysphoria, among others. How can one directly influence and develop a client's spiritual resources? What types of techniques would be required? Rather than viewing spirituality as a cultural variable that needs to be accommodated in therapy, mental health professionals must come to see it as a central therapeutic pathway for bringing about durable change in clients. The concepts of forgiveness, ritual, and "letting go" are topics of interest in current research in the area of spirituality (Larson et al., 1998) and may be potential candidates for examination. Regardless of the methods that are developed or evaluated, though, the STS provides a useful operationalization of spirituality that is amenable to empirical inquiry in this area. Although spirituality is unidimensional in nature, the STS facets may have a differential relevance for various aspects or stages of the treatment process. The ability of the STS to discuss spirituality in terms of three specific components enables a more fine-grained analysis of the role spirituality plays in creating change.

Several limitations of this study need to be discussed. First, with regard to the sample, the mostly African American, inner-city sample is very specific, and it needs to be determined whether these findings would generalize to other groups. Also, given that the outcome analyses were limited to treatment completers and that there was some bias in regard to who dropped out, there is the potential for mortality effects. Second, the treatment program itself was atypical, given both its spiritual focus and time commitment from participants (e.g., 6–8 hr/day for 8 weeks). It needs to be determined whether the STS would be a relevant predictor in a more secular program that has less intensive programming. Third, the findings reported here are exciting and lend themselves to clinical interpretations that are supportive of current theory. However, these formulations are indeed post hoc and need to be explicitly tested using more sophisticated methodologies and analytical techniques (e.g., path analysis, structural equation modeling). On a related note, the exploratory nature of this study encouraged a more liberal approach to discovering relationships. Although I attempted to control for experimentwise alpha levels by using omnibus multivariate analyses, future research will want to take a more focused, a priori approach. The findings from this study can serve as a set of hypotheses to be tested in future studies. Fourth, 13 single-item ratings of treatment outcome were used because they had high content validity as judged by members of this treatment team. Thus, it needs to be shown if the STS can be linked to other, more standardized outcome criteria. Fifth, counselors rated those clients whom they treated, which may have introduced an unknown amount of error to their assessments. In the future, independent judges should be used in making the final evaluations of psychosocial outcome. Finally, more attention also needs to be given to the Connectedness scale, which did not show acceptable levels of internal consistency. This scale is the weakest of the three STS facet scales (Piedmont, 1999; Piedmont & Leach, 2002), and future research may wish to consider whether the

concept should continue to be included in the STS or to revise the items that comprise it.

Conclusions

Spirituality can be conceptualized as a broad-based motivational construct that can be measured in an empirically rigorous manner. Aspects of spirituality can be used as robust predictors of psychosocial outcomes of substance abuse treatment programs. This predictive validity is over and above the contribution made by personality. These data continue to support the view that spirituality represents an independent dimension of personality not contained within existing models of individual differences. Spirituality may well be considered a sixth factor of personality. The multifaceted nature of the STS enables researchers to examine which aspects of spirituality are particularly relevant to treatment. This benefit may lead to the development of new types of interventions that specifically address those qualities and potentially improve therapeutic efficacy. The value of spiritually based substance abuse treatment programs, such as the one involved in this study, may lie in their ability to help participants develop a durable foundation of personal meaning upon which they can build strong lives.

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Received September 19, 2002
Revision received October 21, 2003
Accepted October 26, 2003 ■