



Exploring the Psychometric Properties of the Spiritual Well-Being Scale Among Individuals with Substance Use Disorders

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Abstract Although spirituality seems to be an important protective factor in the treatment of addiction, a serious limitation within the current literature involves a lack of research examining the psychometric properties of scales that measure spirituality among individuals struggling with substance use disorders (SUDs). The purpose of this study was to investigate the psychometric properties of the Spiritual Well-Being Scale (SWB) among a sample of 305 individuals recruited from a residential substance abuse treatment center. Exploratory factor analyses supported the scale's original structure. Validity and reliability tests suggested the SWB could be useful in assessing spiritual well-being among individuals with SUDs.

Keywords Spiritual well-being scale · Psychometric properties · Reliability · Validity · Substance use disorder

Interest in spirituality as a topic of research has risen dramatically since the 1970s, as evidenced by the 40-fold increase in titles of peer-reviewed publications containing words

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related to religion or spirituality (Oman 2014). Unfortunately, the various studies on these topics are difficult to compare because of a persistent lack of agreement as to what differentiates spirituality from religion and what specific elements constitute each. For example, researchers tend to recognize the community aspect of religion in which groups of individuals acknowledge and worship some divinity or truth with established rituals and dogma (Canda and Furman 2010; Cook 2004; Hood et al. 2009; Koenig 2008; Mohr 2006). Spirituality, on the other hand, is thought to be closely related to religion in that both involve a search for the sacred (a divine being or of a sense of ultimate reality or truth); however, spirituality is understood to be a broader concept that may include religion but also comprises an internal and individual understanding of and search for the sacred (Canda & Furman; Cook 2004; Seidlitz et al. 2002). Oman (2014) presents the results of a review of definitions of spirituality appearing in scholarly publications from the 1960s to 2009. Most of these definitions from the 1990s on refer to spirituality as being a search for the sacred that provides purpose and meaning to an individual's life. For the purpose of this study, spirituality is considered to be a multidimensional concept that includes purpose and meaning in life as well as a connectedness to something larger than self (e.g., God, Higher Power, the Transcendent, the Universe, Nature, etc.).

Numerous instruments have been developed to measure the different dimensions of spirituality. Hill (2009) categorized current measurement instruments into level 1 and level 2 approaches. Level 1 instruments were those that allow researchers to determine how religious/spiritual a respondent is by assessing broad dispositional characteristics. These included general spirituality, spiritual well-being, spiritual commitment, spiritual beliefs, spiritual development, attachment to God, and private spiritual practices. Level 2 instruments were those that measure the respondent's religious/spiritual motivations, their experiences of religious/spiritual realities, and their use of religion/spirituality to help them solve problems in the world. These included spiritual experiences, forces motivating spiritual involvement and practices, spirituality as a way of coping with adversity, spiritual struggle, and spiritual meaning and values.

Paloutzian and Ellison (1982) developed a level 1 instrument, the Spiritual Well-Being Scale (SWB), which is one of the most widely used self-report instruments to assess for spirituality in the mental health literature; a recent PsycINFO (2015) search revealed 904 articles published on peer-reviewed journals that cite this measure. The instrument conceptualizes spiritual well-being as having two interrelated dimensions. One dimension concerns the respondents' religious well-being (RWB) which measures their perception of their relationship with God, while the second dimension concerns respondents' existential well-being (EWB) which measures their ability to access an understanding of ultimate concerns such as who they are and what the ultimate purpose and meaning of their life may be. This second dimension is concerned with a sense of life purpose and life satisfaction with no reference to religious concepts.

Interestingly, even though the SWB was developed in the early 1980s and has been validated in a wide variety of populations, it has never been validated for use with individuals in treatment for substance use disorders. It is important to assess the psychometric properties of the SWB among individuals with substance use issues because they have been characterized as having a "spiritual vacuum" (Coleman et al. 1986) and thus not availing themselves of the protective value of spirituality in the treatment of addiction (e.g., Diaz et al. 2014; Galanter et al. 2007; Piderman et al. 2008; Sterling et al. 2007). In addition, spirituality has been considered a fundamental component in the treatment of and recovery from substance use

disorders (Miller and Bogenschutz 2008), and thus, it is essential to have reliable and valid instruments to assess this construct in clinical practice. Therefore, the purpose of this paper is to examine the psychometric properties of the SWB among individuals with substance abuse issues. We will first discuss psychometric properties of the SWB instrument as reported in the literature concerning its use in clinical populations other than substance abuse. Next, we will discuss the relationship between spirituality and addiction. Then, we will discuss the theoretical and empirical relationships between spirituality and depression and spirituality and meaning in life.

Spiritual Well-Being Scale

The SWB psychometric properties have been established in research studies using mostly community samples, particularly among college students. Very few studies, however, have examined the psychometric properties of this instrument in clinical samples. In regard to the reliability of the scale, Paloutzian and Ellison (1982) indicated a 1-week test–retest reliability coefficients of 0.93, 0.96, and 0.86 for the SWB, RWB, and EWB, respectively, among college students attending Christian colleges. Bufford et al. (1991) have confirmed these reliabilities for 1-, 4-, 6-, and 10-week intervals ranging from 0.73 to 0.99 for the overall score and subscales. A more recent investigation among college students reported test–retest reliability of 0.93 and internal consistency alpha of 0.97 for the RWB, while the EWB subscale had a coefficient alpha of 0.90 and the test–retest coefficient of 0.80 (Saunders et al. 2007).

Other investigations have conducted factor analyses yielding different results in regard to the structure of the scale. For instance, Miller et al. (1998) examined the psychometric properties of the SWB in a sample of Caucasians and African American college students. Factor analyses indicated three factors for the Caucasian students (religious well-being, life/satisfaction/purpose, and future) and five factors for African American students (connection with God, satisfaction with God and day-to-day living, future/life contentment, personalized relationship with God, and meaningfulness). In a more recent study among 211 college students, Genia (2001) supported the two distinct dimensions of the SWB conceptualized by the developers of the instrument. Construct validity was demonstrated as those respondents with higher EWB scores reported lower depression and higher self-esteem. Results also documented significant ceiling effects, particularly among Christian participants. One study, however, has shown that the SWB may not be valid for all populations, specifically for African American women (Dugan 2008). This finding suggests that testing of the psychometric properties of the instrument is needed for other vulnerable populations. One such population is individuals in treatment for substance use issues.

Spirituality and Depression

This section presents the theoretical and empirical relationships between spirituality and depression. A review of the literature suggests that both of the dimensions of spirituality (connectedness to God and existential purpose and meaning) are related to depression. For example, Sorajjakool et al. (2008) reported that among their sample of individuals diagnosed with severe depression, depression was “an important factor in raising questions pertaining to meaning in life” (p. 531), that depression was “somehow within the Divine’s grand design for

their destiny” (p. 531), and that depression was related to a sense of disconnection from God. Similarly, Hill et al. (2005) found that among their sample of terminally ill patients, feelings of punishment and abandonment by God were positively associated with distress, confusion, and depression and negatively associated with emotional well-being and quality of life. In contrast, other researchers (Diaz et al. 2009; Diaz et al. 2011a, b), examining spirituality and depression among individuals in treatment for substance use disorders, found that religious well-being (connectedness to God) was positively related to depression while existential well-being (purpose and meaning in life) was negatively related to depression.

Although the research above suggests that both religious well-being and purpose and meaning are statistically associated with depression, it may be that the purpose and meaning dimension of spirituality is more closely related conceptually to depression than is the religious well-being dimension in this population. Among the diagnostic criteria for major depressive disorder in the DSM5 (American Psychiatric Association 2013) are feelings of sadness, emptiness, or hopelessness and diminished interest or pleasure in activities. Many of the purpose/meaning items on the SWB question respondents’ levels of emptiness, loss of interest and pleasure in life, and feelings of hopelessness. In addition, many of the purpose/meaning items appear to refer to the respondents’ level of hope. Hopelessness has been posited to be strongly related to depression in the literature (Liu et al. 2015). These theoretical relationships may explain the consistent findings in the literature reporting the inverse association between these two constructs. Therefore, using a depression measure to examine the validity of the SWB is justified.

Spirituality and Meaning in Life

Purpose and meaning in life has been a subject of interest to theoreticians and researchers since Frankl (1959) began to relate his experiences of torture, slave labor, starvation, and other traumas suffered in his 3 years in World War II concentration camps. He wrote about his belief that the individuals who survived the camps did so because they were able to maintain some sort of purpose in their lives such as an important project that they had left incomplete, a hope of reuniting with those who they loved, or those who had deeply held spiritual beliefs. Frankl believed that all human beings have the capacity to discover meaning in life, as evidenced by those that did so even while undergoing the seemingly meaningless horrors of the concentration camps.

Frankl (1959) further held that meaning in life is so important to adequate human functioning that those lacking it tend to develop psychopathology and to fill the vacuum created by this lack with hedonistic pleasures, material possessions, and the quest for power. However, he recognized that none of these things would suffice over time and that the only thing to give lasting meaning to life is the spiritual freedom arising from the bearing of suffering (a universal human condition) with courage and loving someone other than self. That is, he argued that in order for individuals to survive and thrive, they must discover *why* they live rather than *how* to live. Similar assertions were made by Maddi (1967) who stated that a person’s suffering from existential neurosis experiences alienate from self and society. Maddi (1967) defined existential neurosis as “...the belief that ones’ life is meaningless, by the affective tone of apathy and boredom, and by the absence of selectivity in actions” (p. 313).

The work of Frankl and Maddi inspired other researchers to develop more detailed psychological theories on how meaning in life influences well-being (Lazarus and DeLongis

1983; Reker and Wong 1988). For example, Lazarus and DeLongis noted that purpose and meaning in life influence the way individuals manage and cope with stress throughout the lifespan. They asserted that this is a relatively stable part of individuals' personalities which is manifested in patterns of commitment that are necessary because their absence would lead to a pervasive state of meaninglessness. According to Lazarus and DeLongis (1983), life experiences that challenge this commitment may be perceived as threat and increase the person's vulnerability to stress. Reker and Wong (1988) proposed different ways through which meaning in life affects psychological states. They argued that meaning in life has three components including cognitive, motivational, and affective. They indicated that, at an affective level, "...the realization of personal meaning is always accompanied by feelings of satisfaction and fulfillment" (p.221). Meaning in life, as viewed by this authors, mediates the cognitive processes of interpreting life experiences and the motivation that guides human behavior.

Oman (2014) has noted a tendency of authors to recognize spirituality as a process of searching for the sacred and/or a divine being. Emmons and Schnitker (2014) noted that people actively seek purpose in their lives by setting spiritual (as well as psychological and social) goals, and that the goals they choose have personal significance in regard to cognitive, affective, and behavioral functioning. Bronk (2014) indicated that personal meaning can be found through relationship with others (including the Transcendent) or through activities such as work and service; however, Bronk also noted that within most of psychological research concerned with purpose and meaning, the spiritual concepts of God and faith have taken a central role. He has stated that an individual's purpose in life tends to be a relatively stable and generalized intention that simultaneously provides personal meaning and a focus on concerns beyond the self.

Others have discussed the notion that religion also provides a sense of life meaning and purpose (Chamberlain and Zika 1992; Paloutzian and Ellison 1982). Paloutzian and Ellison (1982) developed the SWB emphasizing on two components of spiritual well-being: religious and existential/purpose and meaning in life. These authors indicated that both dimensions were positively correlated with purpose in life, self-esteem, and intrinsic religious orientation and negatively correlated with loneliness. Similarly, Chamberlain and Zika (1992) pointed out that religiosity may be an important source of meaning in life, whereby meaning in life mediates the relationship between religiosity and well-being.

Study Hypotheses

The current study examined the factor structure of the SWB scale within a sample of individuals with clinical levels of substance use disorder. The scale's reliability and construct validity were also tested using the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff 1977) and the Meaning in Life Questionnaire (MLQ; Steger et al. 2006). Previous research has documented that individuals struggling with substance use disorders are less likely to have a well-defined meaning and purpose in life than their non-user counterparts (Coleman et al. 1986). Although this study does not compare users versus non-users, meaning in life was included in the study because of its conceptual and empirical associations with spirituality discussed in the previous section which allow for the examination of the validity of the SWB. In addition, an empirical relationship between spirituality, meaning in life, and depression has been described among clinical substance use samples (Kleftaras and

Katsogianni 2012; Horton et al. 2016). Based on the theoretical and empirical associations between spirituality, and meaning in life and depression discussed above, it was expected that (1) scores on each of the SWB subscales would be negatively correlated with depression scores and (2) scores on both EWB and RWB would be positively correlated with the presence of meaning in life scores and negatively correlated with the search for meaning in life scores.

Methods

Design and Sample

This study used a cross-sectional design of respondents who were recruited using a convenience sample of 305 individuals; these clients were voluntarily attending a residential/inpatient substance abuse treatment center located in southern Florida between December 2012 and June 2013. This agency, like the majority of the substance abuse treatment agencies in the area, is based on the 12 steps model and provides detoxification services; inpatient, residential, and partial hospitalization; and intensive outpatient services to clients who are able to pay for their treatment via insurance or self-pay. All clients who participated in this study were receiving inpatient residential services for approximately 30 to 45 days. Clients attend this agency voluntarily.

After receiving approval from the university Institutional Review Board, the researchers explained the study protocol to two staff members of the research team of the collaborating substance abuse treatment site. Clients were then recruited to participate in the study by these two staff members. These staff members were not involved in providing any therapeutic interventions to the clients; the only time clients interacted with these staff was when they approached clients about participation in this study and staff helped the clients who provided signed consent with the completion of the study measures. These clients had completed the detoxification period and were deemed medically and psychiatrically stable by the agency clinical and medical personnel before moving into a lower level of residential care in the treatment community. In accordance with normal agency procedure, staff met with each client within 72 h of his or her entry into the lower level of care. At that time, a psychosocial assessment was conducted and clients were asked to fill out a battery of assessment tools and other instruments to determine diagnosis and treatment needs. These assessments included demographic information and self-report measures related to psychological and social functioning. The staff members then obtained informed consent from the clients to complete an additional self-report questionnaire measuring spiritual well-being, life satisfaction, and depressive symptomatology provided by the study researchers. Clients who were unwilling to sign the informed consent form were excluded from the study. The agency did not provide information about the total number of clients who refused to participate in the study. In addition, the agency did not provide any information on the substance use history or substance use diagnoses of the respondents. Participants did not receive monetary incentives for their participation in this study. In addition, there is no data assessing whether this agency represents the larger population of agencies in the area. However, many residential substance abuse treatment agencies in this region use the 12 steps model and provide similar therapeutic services (detoxification services and inpatient, residential and partial hospitalization) to the ones offered at the facility where participants for this study were recruited.

Measures

The Spiritual Well-Being Scale The SWB (Paloutzian and Ellison 1982) was used to measure spiritual well-being. The SWB is a 20-item self-report instrument that contains two subscales: (1) the Existential Well Being subscale (EWB) (“I don’t know who I am, where I came from, or where I am going”) and (2) the Religious Well Being subscale (RWB) (“I have a personally meaningful relationship with God”). The SWB has a 6-point Likert-type scale ranging from 1 = *strongly disagree*, 2 = *mostly agree*, 3 = *disagree*, 4 = *agree*, 5 = *moderately agree*, and 6 = *strongly agree*. It has demonstrated psychometric properties. Coefficient alphas of 0.97 and a test–retest coefficient of 0.93 have been reported for the RWB while the EWB obtained 0.90 and 0.80 respectively (Saunders et al. 2007).

Meaning in Life Questionnaire The MLQ (Steger et al. 2006) is a self-reported 10-item questionnaire that contains two subscales: (1) presence of meaning (MLQ-P) (how much participants feel their lives have meaning) and (2) search for meaning (MLQ-S) (how much participants look to find meaning in their lives). The MLQ has a 7-point Likert-type scale that ranges from 1 = *absolutely true* to 7 = *absolutely untrue*. Research has shown good psychometric properties of this instrument (Schulenberg et al. 2011; Steger et al. 2006). Steger et al. (2006) reported alpha coefficients of 0.82 for the MLQ-S and 0.87 for the MLQ-P in a community sample. They also indicated that test–retest reliability coefficients were 0.70 and 0.73 for the MLQ-P and MLQ-S, respectively. Another investigation used a clinical sample indicating that the MLQ is a reliable tool (Schulenberg et al. 2011).

The Center for Epidemiologic Studies Depression Scale The Center for Epidemiologic Studies Depression Scale (CES-D; Radloff 1977) was used to assess the current level of depressive symptomatology. The CES-D is a 20-item self-report scale designed for use in the general population. This scale has been used in recent research with individuals who abused substances (Larson et al. 2007; Sofuoglu et al. 2006; Strathdee et al. 2006). Participants are asked how often they experienced each symptom during the previous week using a 4-point Likert scale. Response categories are as follows: 0 = *rarely or none of the time (less than 1 day)*, 1 = *some or little of the time (1–2 days)*, 2 = *occasionally or a moderate amount of time (3–4 days)*, and 3 = *most or all of the time (5–7 days)*. The total score is the sum of these 20 items and can range from 0 to 60. The cutoff score of 16 or more designates the respondent as clinically depressed (Myers and Weissman 1980; Schulberg et al. 1985). The CES-D has demonstrated high reliability in a variety of clinical and community samples (Orme et al. 1986; Radloff 1977, 1987). In a substance abuse sample, the internal consistency reliability was assessed by calculating coefficient alpha which was 0.81 for the total scale (Diaz et al. 2011a, b).

Other Variables

Demographic information was collected by self-report asking participants for their age, gender, self-identified ethnicity (White Non-Hispanic, Hispanic, African American, or other), and marital status (single, married, cohabitating with a partner, separated but married, divorced, widowed, and other). Respondents were also asked to identify their level of education (less than a high school, high school, some college, college degree, graduate degree, doctorate, and other), employment status (less than 40 h per week, 40 h per week, unemployed, homemaker,

retired, other), and religious backgrounds (Catholic, Adventist, Jehova's Witness, Mormon, Jewish, Muslim, Buddhist, Protestant, other, and none).

Data Analysis

The data analysis consisted of seven main steps including assessing reliability of the measurement, examining the correlation matrix, conducting a principal component analysis, determining the number of factors to be retained, varimax factor rotation, and use and interpretation of the results.

Descriptive statistics were used to explore the demographic data. The SWB item directionality was handled by reversing the score on items before any analyses was conducted. Reliability and construct validity were assessed prior to conducting a principal component analysis. Cronbach's alpha was used to evaluate internal consistency reliability for each subscale. Statistical significance was set to an alpha value of 0.05. Pearson's product moment was utilized to test the correlation between total SWB, EWB, RWB and CESD; SWB, EWB, and RWB; and the MLQ, MLQ-P, and MLQ-S to examine the scale construct validity.

Principal components analysis was used with Varimax rotation to identify the number and meaning of the different factors. Kaiser's criterion was applied a priori to factor rotation to eliminate the error variance that would be included along with the common variance. Only those with eigenvalues of 1.0 greater were retained. Items were selected according to factor loadings of 0.30 or above. The process of deciding how many factors to retain began by examining the screen plot and on the interpretability of tentative solutions.

Results

Sample Demographics

Sample demographics can be seen in Table 1. All clients in the sample were English speaking. The mean age of participants was 33.7 years, ranging from 18 to 67 years old. Approximately 62% of participants were male, and almost all were White non-Hispanic (89%) and heterosexual ($n = 279$; 91.8%). The majority of the respondents were single ($n = 161$, 52.8%); 76 were married (24.9%); 25 were cohabitating with other (8.2%); 27 divorced (8.9%), 14 separated but married (4.6%); and 1 widowed and 1 other, 0.3% and 0.3% respectively. In terms of education, 10 participants reported having less than a high school education, 73 graduated from high school, 122 had some college education, 81 had a college degree, and 18 reported having a graduate degree. A large number of participants were employed 40 h of more ($n = 144$; 47.2%), 47 reported working less than 40 h per week (15.4%), 85 were unemployed (27.9%), 16 were homemakers (5.2%), and 13 were retired (4.3%). In regard to religious affiliation, 36.8% of the participants reported being Catholic ($n = 112$), 88 (28.9%) reported "other affiliation," 72 (23.7%) reported "none," 16 (5.3) were protestants, and 8 (2.6%) were Jewish, and the others reported being either Adventist ($n = 1$), Mormon ($n = 1$), Muslim (2), Buddhist (3), and Jehova's Witness ($n = 1$).

Reliability

In this study, scale scores have excellent internal reliability with internal consistency testing revealing a Cronbach's alpha for the two-factor structure as follows: total SWB = 0.918,

Table 1 Demographic characteristics of sample ($N = 305$)

	Number	Percent
<i>Gender</i>		
Females	115	37.7
Male	190	62.3
<i>Ethno-cultural Identification</i>		
White non-Hispanic	272	89.2
Hispanic	17	5.6
African American	12	3.9
Other	4	1.3
<i>Religious affiliation</i>		
Catholic	112	36.7
Adventist	1	.3
Jehova's witness	1	.3
Mormon	1	.3
Buddhist	3	1.0
Jewish	8	2.6
Muslim	2	.7
Protestant	16	5.2
Other	88	28.9
None	72	23.6
<i>Marital status</i>		
Single never married	161	52.8
Legally married	76	24.9
Cohabiting	25	8.2
Separated but married	14	4.6
Divorced	27	8.9
Widowed	1	.3
Other	1	.3
<i>Employment status</i>		
40 h	144	47.2
Fewer than 40 h	47	15.4
Homemaker	16	5.2
Retired	13	4.3
Unemployed	84	27.9
<i>Education level</i>		
Less than high school	10	3.3
High school	73	23.9
Some college	122	40.0
College degree	81	26.6
Graduate degree	18	5.9

EWB = 0.883, and RWB = 0.929. The corrected item-total correlation ranged from 0.401 to 0.693 whereas values for the Cronbach's alpha, if an item was deleted, ranged from 0.91 to 0.87 for each.

Construct (Discriminant) Validity

Significant negative correlations were found between total SWB, EWB, and RWB and depressive symptom scores (see Table 2). Respondents who reported higher levels of spiritual well-being had lower levels of depressive symptoms. There were significant positive correlations between the total SWB, EWB, and RWB and presence of meaning in life (see Table 3). Clients who reported higher levels of spiritual well-being indicated higher levels of presence of purpose and meaning in their life. There was a significant and negative correlation between the

Table 2 Construct validity of SWB and depressive symptoms

SWBS	CESD	<i>p</i> Value
Existential well-being	-0.67	<.000
Religious well-being	-0.25	<.000
Total SWB	-0.52	<.000

EWB and the search for meaning in life whereby those who reported a higher existential purpose and meaning in life were less likely to report searching for meaning in life. However, the correlation between RWB and search for meaning in life was not statistically significant. It is important to note alpha coefficients for the MLQ were 0.75 for the existential subscale and 0.30 for the religious well-being subscale with an overall of 0.67. Alphas are affected by the intercorrelations of items in a scale and, more importantly, the number of items. Given that the meaning in life scale has only 10 items, alpha coefficient as low as 0.6 could be acceptable.

Factor Analysis

The internal structure of the SWB was analyzed using PCA with Varimax rotation, and the 20 items were reduced to a two-factor solution accounting for 57% of the total variance. A number of stopping rules exist to assist researchers in determining when to stop adding factors. Kaiser's topping rule states that only the factors with eigenvalues over 1.00 should be retained. Only two factors in this study had eigenvalues over 1.00 with all other values being below the cutoff point. The scree plot is another strategy for examining eigenvalues. It is a graphic depiction of the relationship between the eigenvalues and the factors. The scree plot for this study appeared to level off after two factors. The scree plot and the eigenvalues showed that two principal components (PCs) were enough to explain the data, and the remaining components were less informative. A third approach is non-trivial factors. In interpreting which items load on each factor, the 0.30 is a generally accepted minimum factor loading; therefore, factor loading scores less than 0.30 were removed for clarity. The last strategy used was the percent of variance explained which is closely related to Kaiser's stopping rule and the scree plot. This is a more challenging approach as it is difficult to determine where to stop. Therefore, this strategy was used in combination with the other approaches.

Table 4 presents a two-factor analysis—with all variables clearly loading on two factors. Means, standard deviations, and alpha coefficients for scale scores are also provided in Table 4. The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.917 and the Bartlett's test of sphericity was significant ($\chi^2 = 3469.030$, $p = .000$).

The first factor included 10 items: "I don't find much satisfaction in private prayer with God," "I believe that God loves me and cares about me," "I believe that God is impersonal and not interested in my daily situation," "I have a personally meaningful relationship with God,"

Table 3 Construct validity of SWB and meaning in life

SWBS	MLQ	MLQ-P	MLQ-S
Existential well-being	0.42*	0.75*	-0.26*
Religious well-being	0.41*	0.30*	0.05
Total SWB	0.50*	0.67*	-0.10

* $p < .001$

Table 4 Mean, standard deviation, and factor loading for 20 items of SWB

Item	M	SD	Factor loading (fixed 2 factors)	
			Factor 1	Factor 2
Factor 1	3.85	1.86	0.70	0.08
1. I do not find much satisfaction in private prayer with God				
3. I believe that God loves me and cares about me	4.50	1.60	0.70	0.14
5. I believe that God is impersonal and not interested in my daily situations	4.27	1.71	0.71	0.24
7. I have a personally meaningful relationship with God	3.66	1.75	0.82	0.11
9. I do not get much personal strength and support from my God	3.70	1.79	0.69	0.20
11. I believe that God is concerned about my problems	4.16	1.63	0.85	0.14
13. I do not have a personally satisfying relationship with God	3.62	1.73	0.70	0.22
15. My relationship with God helps me not feel lonely	3.57	1.71	0.81	0.18
17. I feel most fulfilled when I am in close communion with God	3.71	1.71	0.83	0.09
19. My relationship with God contributes to my sense of well-being	3.90	1.71	0.87	0.08
Factor 2	4.16	1.73	0.12	0.66
2. I do not know who I am, where I came from or where I am going				
4. I feel that life is a positive experience	4.63	1.36	0.23	0.71
6. I feel unsettled about my future	2.87	1.70	0.02	0.68
8. I feel very fulfilled and satisfied with life	2.37	1.54	0.17	0.70
10. I feel a sense of well-being about the direction my life is headed in	3.73	1.61	0.15	0.71
12. I do not enjoy much about life	4.06	1.63	0.07	0.77
14. I feel good about my future	3.98	1.55	0.16	0.80
16. I feel that life is full of conflict and unhappiness	3.45	1.53	0.03	0.65
18. Life does not have much meaning	4.74	1.44	0.24	0.70
20. I believe there is some real purpose for my life	4.98	1.29	0.36	0.56
Variance explained			31.49	25.15
Total variance explained				57.01
Cronbach's alpha			0.93	0.89
Total Cronbach's alpha				0.92

“I don't get much personal strength and support from my God,” “I believe that God is concerned about my problems,” “I don't have a personally satisfying relationship with God,” “My relationship with god helps me not feel lonely,” “I feel most fulfilled when I am in close communion with God,” and “My relationship with god contributes to my sense of well-being.” This factor accounted for 31.49% of the total variance.

The second factor included the remaining 10 items: “I don't know who I am, where I came from or where I'm going”; “I feel that life is a positive experience”; “I feel unsettled about my future”; “I feel very fulfilled and satisfied with life”; “I feel a sense of well-being about the direction my life is headed in”; “I don't enjoy much about life”; “I feel good about my future”; “I feel that life is full of conflict and unhappiness”; “life doesn't have much meaning”; and “I believe there is some real purpose for my life. This factor accounted for 25.15% of the total variance.

Discussion

The important role of spirituality among individuals who struggle with substance use disorders has been discussed widely in the mental health literature in the past decade (Diaz et al. 2014; Krentzman et al. 2013; Piderman et al. 2008; Sterling et al. 2007; Zemore 2007). However, ambiguity about the clinical implications of the findings in these studies persists largely

because of concerns regarding the conceptualization and operationalization of spirituality (Lee and Newberg 2005). More specifically, there is a dearth of empirical efforts examining the validity and reliability of instruments used to measure spirituality in this population. Therefore, the purpose of this study was to examine the psychometric properties of one of the most widely used instruments to measure spirituality, the Spiritual Well-being Scale (Paloutzian and Ellison 1982) in a clinical sample of individuals with SUDs. Exploratory factor analyses were conducted to examine the factor structure of the scale; its reliability and construct validity (concurrent and discriminant validity) were also tested.

Construct Validity

Convergent: SWB and Meaning in Life (Presence and Search) Findings revealed that the SWB seems to be an instrument that is both valid and reliable for measuring spiritual well-being in this population. Our results add to existing evidence supporting the high reliability of the scale which has been reported by previous investigations in samples of individuals struggling with SUDs (Diaz et al. 2014; Fernander et al. 2004; Saunders et al. 2007). In addition, our results suggest that the scale is also valid for use with this population. For construct validity testing, discriminant validity was examined to assess whether the SWB subscales related to other variables within a system of theoretical relationships as expected (Rubin and Babbie 2013) by comparing the SWB subscales with the MLQ subscales. We expected that both EWB and RWB would positively correlate with the presence of meaning in life and would negatively correlate with the search for meaning in life and with depressive symptoms.

Supporting our hypothesis, clients who reported higher levels of both existential purpose and meaning in life and religious well-being or closeness to God reported higher scores for the presence of meaning in life. This could be expected since meaning in life reflects feelings regarding self-significance that allow an individual to characterize his or her life as purposeful and comprehensible. Prominent existential writers have posited that a fundamental dimension of spiritual well-being is meaning in life (Frankl 1959; Maddi 1967). In addition, religion has been described as a means through which individuals experience purpose and meaning in life (Emmons and Paloutzian 2003), and research has indicated positive relationships between meaning in life and religiousness (Chamberlain and Zika 1988).

In regard to the validity of the SWB subscales and search for meaning in life, our results indicated that there was a positive significant correlation between EWB and the search for meaning, supporting our hypothesis, and based on the conceptual and empirical relationships between spirituality and meaning in life, there was a high correlation between the SWB subscales and the presence of meaning in life subscale which provides support for the convergent validity of the SWB scale. However, the relationship between the RWB and the search for meaning in life was not significant. This unexpected result may be indicative of distinction between religious well-being and searching for one's meaning in life. Religious well-being focuses on the individual's perception of closeness to God, which involves a "vertical dimension of spirituality" (Bufford et al. 1991), whereas the search for meaning in life measures how much an individual strives to find meaning and understanding in their lives (Steger et al. 2006). Even though this distinction contradicts the above notion of religion being a source for meaning in life, it is possible that for this sample, the individual's search for meaning may not take place within a religious context. That is, it is possible that religious well-being does not provide an opportunity for the discovering of purpose and meaning in life or a

source for purpose and meaning for this sample. These results provide support for the greater conceptual relatedness of spiritual well-being (existential purpose/meaning) as compared to religious well-being (connectedness to God) as evidenced by the significant difference between correlation values for the two SWB subscales and the MLQ scales. Future research needs to be conducted to further examine these complex relationships.

Discriminant: SWB and Depression In regard to depressive symptoms, we found that the scale has strong discriminant validity as clients who reported higher levels of EWB and RWB indicated lower levels of depressive symptomatology. There are no studies that have examined the discriminant validity of the SWB as it relates to depression in a clinical sample, and therefore, it is not possible to discuss these results within that context. However, studies among college students have reported different findings from our study regarding the relationship between SWB and depression (Genia 2001; Fehrin et al. 1987). These investigations showed that only EWB, and not RWB, was significantly negatively related to depression as measured by the Beck Depression Inventory (Beck et al. 1961). In contrast, our findings suggest the importance of both dimensions of spirituality among individuals struggling with substance use disorders. That is, both the EWB and the RWB were significantly negatively related to depressive symptoms measured by the CES-D.

SWB Factor Analyses

In regard to our factor analyses, our data support the validity of the SWB scale in a population of individuals with substance use disorders. For all the participants, the factor groupings corresponded closely to the EWB and RWB subscales as designed by the scale's developers (Paloutzian and Ellison 1982), with a total explained variance of 57.01%. Factor 1, "religious well-being," and factor 2, "existential well-being," contained the same items as those in the original version of the scale. Although it is not possible to compare our results with other studies since this is the first investigation examining the factor structure of the SWB in this population, it seems that differential pattern of correlations suggest that the two subscales of the SWB are measuring unique dimensions of spirituality. This is congruent with the notion that it is important to distinguish these two dimensions of spirituality and analyze them separately (Koenig 2008). The SWB exhibited valid psychometric properties in a residential patient population. The results of our study support the utility of the SWB in an SUD population to measure important factors that involve two distinct dimensions of spirituality. The scale is a valid and reliable instrument that captures a modern operationalization of spirituality inclusive of purpose and meaning in life and religious well-being. This scale can be used by mental health practitioners to (1) assess two important dimensions of spiritual well-being in clinical samples, (2) evaluate the impact that clinical interventions may have on the spiritual growth of individuals attending addiction treatment, and (3) examine the effects that spiritual growth may have on overall treatment effectiveness.

Limitations of the Study

Our study is the first investigation to examine the psychometric properties of one of the most widely used instrument to measure spirituality in mental health using a large sample of individuals struggling with substance use disorder. However, the findings from this investigation need to

be interpreted with caution considering several limitations. First, data were collected from clients attending a for-profit agency that provides residential services. Therefore, results cannot be generalized to samples derived from other treatment settings. This agency utilizes the 12-step model that focuses on spirituality and the need for a higher power, which may have influenced the results of our study. Representativeness and generalizability are also limited because the study participants were all recruited from one specific treatment agency whose treatment protocols may differ from some treatment centers. In addition, our sample consisted of individuals with financial resources that included insurance and so, our results cannot be generalized to individuals in substance abuse treatment who do not have a similar socioeconomic background. Perhaps more notably, most participants self-identified as White non-Hispanic. This limitation is particularly important given the results of the Dugan (2008) study that found that the SWB was not valid and reliable for use with African American women in recovery. Future research should utilize a sample with more cultural and ethnic diversity.

This study also used a cross-sectional design which limits the ability to conduct other psychometric testing including test–retest reliability. Future studies would benefit from having a longitudinal design that would explore the stability of the SWB and what changes, if any, there are in spirituality over the course of treatment. Lastly, this study did not include a control group with individuals who were not in treatment for substance use issues.

Conclusion

Although spirituality seems to be an important protective factor in the treatment of addiction (Diaz et al. 2014; Krentzman et al. 2013; Piderman et al. 2008; Sterling et al. 2007; Zemore 2007), a serious gap in the literature involves the lack of research examining the psychometric properties of scales that operationalize this construct among individuals with substance use disorders. More specifically, there is a dearth of empirical efforts examining the validity and reliability of instruments used to measure spirituality in this population. Therefore, the purpose of this study was to examine the psychometric properties of one of the most widely used instruments to measure spirituality, the Spiritual Well-being Scale (Paloutzian and Ellison 1982), in a clinical sample of individuals with substance use disorders. Exploratory factor analyses were conducted to examine the factor structure of the scale; its reliability and construct validity (concurrent and discriminant validity) were also tested. Results showed that the SWB is a reliable and valid instrument for use with this population. Two dimensions of the scale were reflected as the existential/purpose and meaning in life and religious well-being. More research is needed to replicate and expand the findings of our study to other clinical settings, to clients receiving substance use-related services at different levels of care, and to more culturally and ethnically diverse groups of clients.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no potential conflict of interest.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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