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The Spirituality Index of Well-Being: Development and testing of a new measure

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- OBJECTIVE: To evaluate the reliability and validity of the Spirituality Index of Well-Being (SIWB) Scale in a patient population.
- STUDY DESIGN: Cross-sectional survey.
- POPULATION: Community-dwelling elderly individuals (n = 277) recruited from primary care clinic sites in the Kansas City metropolitan area.
- OUTCOMES MEASURED: Internal consistency, concurrent construct validity, discriminant validity, and factor analysis with Varimax rotation.
- RESULTS: The initial version of the SIWB contained 40 items: 20 from a self-efficacy domain and 20 from a life scheme domain. Factor analysis yielded 6 items loaded most strongly on factor 1 (intrapersonal self-efficacy) and 6 other items loaded strongly on factor 2 (life scheme). The self-efficacy subscale had an of .83 and the life scheme subscale had an of .80; the total 12-item SIWB scale had an of .87. The SIWB had significant and expected correlations with other quality of life measures related to subjective well-being: EuroQol (r = .18), Geriatric Depression Scale (r = -.35), the Physical Functioning Index from the Short Form 36 (r = .28), and the Years of Healthy Life Scale (r = -.35). Religiosity did not correlate significantly with the SIWB (r = .12; P = .056).
- CONCLUSIONS: The 12-item SIWB scale is a valid and reliable measure of subjective well-being in an older patient population.

key words **Quality of life; subjective well-being; measurement; spirituality; older persons.**
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Spirituality and religion are embedded within contemporary American culture[1] and have become an increasingly

important part of the patient experience of health and illness.[2] There is growing interest in examining the association of spirituality, religion, and health-related outcomes in the United States, particularly in the areas of health behavior and promotion[3] and psychoneuroimmunology.[4] Despite this interest, the absence of operational definitions of spirituality and religion, the contamination of spirituality items with measures of religion, and the lack of valid and reliable instruments that gauge these constructs continue to be major limitations to work in this area.[5]

Conceptually, religion or religiosity is often viewed in terms of the various organized, individual, and attitudinal manifestations of different faith traditions, and spirituality connotes and expresses a sense of meaning, purpose, or power from within or from a transcendent source.[6] There is no shortage of instruments that measure dimensions of either construct, and researchers from the fields of sociology,[7] psychology,[6] and pastoral theology and chaplaincy[8] have developed a variety of scales of religion and spirituality.[9] It remains unclear, however, whether these constructs can be extended to health care settings or whether these instruments are applicable and useful as measures of individual or population health. For example, frequency of religious service attendance is often a single-item measure used as an independent variable in studies of health outcomes, such as health status.[10] Although service attendance is associated with self-reported health in community-dwelling elderly individuals, the effect of this activity on perceived health disappears when functional status is controlled.[10] Therefore, can religious service attendance be considered an independent variable, or is it simply a proxy of functional status within a geriatric population?[11]

This example highlights the importance of context in the use of any measure of religion or spirituality. It also points to the health-related quality of life field as a useful orientation for conceptualizing spirituality and religion in health care settings. Health-related quality of life, an individual's or group's perception of health over time, is predicated on the assumption that a patient's experiences, beliefs, expectations, and perceptions directly influence the physical, psychological, and social domains of health.[12] Spirituality and religion have been proposed as mediators of 1 characteristic of psychological health, subjective well-being, in 4 ways: by ensuring social support and integration within a community, by establishing personal relationships with a divine other, by promoting a salubrious personal lifestyle that is congruent with a personal faith tradition, and by providing systems of meaning and existential coherence.[13]

To identify and describe elements of spirituality that are linked to subjective well-being, our prior qualitative work explored the patient perspective. We found that patients consider spirituality in predominantly cognitive terms and incorporate the domains of life scheme and positive intentionality, or self-efficacy, as primary components **Figure 1**.[14] In addition to suggesting a dynamic conceptual framework, this research supported the assumption that patients associate spirituality with well-being largely through the provision of systems of meaning and coherence.

The current study builds on this work and describes the development and evaluation of a brief research instrument, the Spirituality Index of Well-Being (SIWB), which is designed to measure the effect of spirituality on subjective well-being. Several assumptions guided our study design and analysis. First, we recognized that there are no global yet parsimonious instruments that capture the complexity and depth of spirituality in any context, health care or otherwise. Second, based on our qualitative work, we viewed spirituality as subsumed within the psychological rather than within the social or physical domain. Third, we considered the SIWB as a health-related quality of life measure, one to be used in studies of individual or population health, rather than as an assessment tool.

From the cultural and social perspectives, spirituality and religion are especially salient in the lives of minority elderly,[15,16] particularly within the settings of serious illness and end-of-life care.[17] From a population health perspective, increased life expectancy in the United States highlights the importance of health-related quality of life assessment in the areas of chronic illness, aging, and end-of-life care, and Healthy People 2010 has identified quality of life improvement as a specific public health objective.[18] By bridging both perspectives, the SIWB has the potential to add a unique and patient-centered dimension to health-related quality of life research.

METHODS

Scale and item development

The SIWB was designed as a research tool to measure the effect of patient-reported spirituality on subjective well-being. Our understanding of spirituality and the stimulus material for the index have been described elsewhere.[14] In brief, a congruent, meaningful life scheme and a high degree of positive intentionality or self-efficacy promote personal agency, an intermediary between spirituality and subjective well-being **Figure**.

Life scheme is similar to the construct of sense of coherence, which was described by Antonovsky as a positive, pervasive way of viewing the world, and one's life in it, lending elements of comprehensibility, manageability, and meaningfulness.[19] Positive intentionality shares characteristics with self-efficacy, which is an individual's belief in the capacity to organize and perform activities that are required for a prescribed goal.[20] Self-efficacy beliefs are domain and task specific, and participants in our focus group study depicted these beliefs within the context of overcoming threatened or actual changes to their functioning.

Forty items, 20 for the life scheme domain and 20 for the self-efficacy domain, were developed by investigators who conducted the qualitative study (T.P.D., B.B.F.). The scale was prefaced by the question, "Which statement best describes your feelings and choices," and each item was a statement accompanied by a 5-point Likert scale response from "strongly agree" to "strongly disagree," with the midpoint representing "neither agree nor disagree." Item content consisted of positive and negative statements regarding life scheme (eg, "I haven't yet found my life's purpose") and personal self-efficacy (eg, "Despite any problem that I may face, I can get through the day").

Study population

Participants were 65 years or older and enrolled in a cohort study to assess the ability of performance measures to predict future health service use, health status, and functional status. Recruitment for the parent study occurred between April and November 1996 from primary care sites within the Veteran's Affairs network and a Medicare health management organization serving the Kansas City metropolitan area. The study population represented the cohort 36 months after enrollment.

Measures

Demographic information. Participants had the following demographic information collected: age, sex, race, and education level.

Health and functional status. Subjective health status was measured by the EuroQol, a recognized quality-of-life measure,[21] in addition to a single-item measure of global health from the Years of Healthy Life (YOHL) Scale.[22] The Physical Functioning Index of the Medical Outcomes Study Short Form 36 was used to assess functional status.[23]

Mental health status. We measured mental health status with the Geriatric Depression Scale (GDS), a 15-item instrument with a dichotomous (yes/no) response format.[24] Items from the fear of death domain of the Death Attitude Profile Scale-Revised (DAP-R) were selected as an additional proxy of psychological well-being.[25]

Religiosity. Five items derived from questions developed by the National Opinion Research Center[26] were preferentially selected according to a previously tested and validated model of religiosity.[27] Frequency of religious or spiritual service attendance was used to assess organizational religiosity, and frequency of private prayer or spiritual practice was used to measure nonorganizational religiosity. Three items were used to measure subjective or intrinsic religiosity: self-reported strength of religious or spiritual orientation, closeness to God (or a Higher Force), and frequency of affective spiritual experiences..

Data analysis

Item reduction and reliability testing. The initial 40-item pool was reduced to 20 life scheme items and 14 self-efficacy items based on subject response and feedback during survey administration. Items that subjects could not understand or

answer by self-report were removed.

First, internal reliability analyses were conducted for each subscale (life scheme, self-efficacy) and for the SIWB scale with a goal of producing high internal consistency as measured by the Cronbach's α (eg, > .70). Items that contributed to lower internal reliability were discarded, which removed 1 self-efficacy item and 6 life scheme items from the scale.

To further refine the SIWB and its subscales, the remaining items were subjected to principal components analysis by using Varimax rotation. After rotation, the 2 largest factors were readily interpretable, with items loading as expected: self-efficacy items loading on the first factor and life scheme items loading on the second factor. From each factor, the top 6 items ranked by loading magnitude were selected for inclusion into the final scale.

Internal reliabilities for the subscales (6 items each) and the SIWB scale (12 items total) were calculated. A maximum likelihood factor analysis with Varimax rotation also was conducted to verify that a 2-factor solution remained for the reduced 12-item scale.

Validity testing. Well-being is conceptually subsumed within the psychological domain of quality of life measures and is comprised of the dimensions of positive affect (affective) and subjective perceptions of general health and life satisfaction (cognitive).[12] As a result, we determined concurrent construct validity by correlating the 2 6-item subscale scores and the total SIWB score with summed scores from the fear of death items from the DAP-R, the GDS, YOHL, the Physical Functioning Index from the SF-36, and the EuroQol. We anticipated positive correlations of the SIWB with physical functioning (SF-36) and quality of life (EuroQol) and inverse correlations with fear of death (DAP-R), depression (GDS), and self-reported poor health status (YOHL). Discriminant validity was examined by correlating the SIWB subscale and total scores with the religiosity measure. All analyses were performed with the Statistical Package for the Social Sciences version 9.0 (SPSS, Chicago, IL, 1996).

RESULTS

Study population

Two hundred seventy-seven patients were in the final cohort and participated in the study **Table 1**. The mean age of the study population was 74 years, with a range of 65 to 90 years. Most participants (66%) were 75 years or younger, and the population was evenly distributed between males and females. Participants were predominantly white (78%), reported a wide range of education levels, and had a mean physical function score (SF-36) of 62.92 and a mean health status score (EuroQol) of 0.77.

Internal consistency and factor analysis

Twelve items, 6 each from the self-efficacy and life scheme subscales, remained from the original 40 items after item reduction; initial reliability testing and factor analysis were performed. This 12-item measure of the SIWB produced a coefficient α of .87, indicating good internal consistency. The 6-item subscales also demonstrated good reliability: .83 for self-efficacy and .80 for life scheme.

Results of factor analysis with individual items and item loadings for the final SIWB scale are presented in **Table 2**. A confirmatory approach anticipated 2 factors, which was based on our conceptual framework. Factor analysis found that 2 factors, reasonably named self-efficacy and life scheme, accounted for a substantial proportion of the variance in responses. The eigenvalue for the self-efficacy factor was 2.88, accounting for 24.04% of the total variance. The eigenvalue for the life scheme factor was 2.35, accounting for 19.57% of the total variance. A Pearson chi-square goodness of fit test of the difference between the actual and reproduced correlation patterns was not significant (51.72; df = 43; P = .17), which suggested that a 2-factor solution was reasonable. **Table 3** contains the descriptive statistics for the SIWB scale and its subscales.

Validity testing

To provide a more consistent and intuitive interpretation of scores and correlations, SIWB total and subscale scores were produced by reverse scoring and summing items. As a result, higher SIWB scores indicated a greater degree of spirituality or its components. Correlations between the summed SIWB and subscale scores and other health-related measures of well-being are presented in **Table 4**. The SIWB and its subscales had significant and expected correlations in direction and magnitude with other measures related to subjective well-being. Fear of death and depression (GDS) had the highest inverse correlations with the SIWB and its subscales. Subjective perceptions of general health and life satisfaction, as measured by self-reports of poor health status (YOHL), functional quality of life (EuroQol), and physical functioning (SF-36) had significant correlations with the SIWB.

Although the life scheme subscale did have a significant but small correlation with a previously validated measure of religiosity, the total SIWB scale and self-efficacy subscale did not have a significant correlation with religiosity.

DISCUSSION

The purpose of this study was to evaluate a brief research instrument designed to measure the effect of spirituality on subjective well-being in a patient population. Instruments that are developed to measure health-related quality of life are evaluated according to several criteria, most notably their degree of validity and reliability.[28] The SIWB demonstrated very good reliability with good internal consistency for the total and subscales as assessed by α coefficient in a geriatric patient population.

The construct spirituality has multiple dimensions and connotations in health-related settings,[29] which challenge the validity testing of any spirituality instrument. We chose a qualitative approach, rather than the use of experts or preexisting measures in health services research, pastoral theology and chaplaincy, and the social sciences, to conceptualize how patients understand and define spirituality, in particular as if affects their well-being. This approach also provided stimulus material for SIWB item selection and scale construction.

In our conceptual framework, spirituality within a health context is a state that is comprised primarily of the domains of life scheme and self-efficacy. Patients who report high self-efficacy beliefs regarding their functioning and who view their lives as purposeful and meaningful should score higher on measures of subjective well-being than those who do not hold such beliefs or attitudes. The use of concurrent construct validity testing allowed us to test this assumption through the correlation of SIWB scores with other established proxies of subjective well-being. Face validity may suggest that the SIWB is a measure of affective or cognitive states (eg, depression) or a proxy for self-efficacy and alienation rather than spirituality. Concurrent construct validity testing provided a means to determine the independence of the SIWB from an accepted measure of depression, the GDS.

Although the pilot version of the SIWB consisted of 40 items with positive and negative statements regarding life scheme and personal self-efficacy, only negative items remained after validity and reliability testing. One explanation for the exclusion of positive statements from the SIWB may involve the predominance of a specific component of subjective well-being in older persons, a low level of negative affect. There are several additional components of subjective well-being (eg, positive affect, satisfaction with work or other domains, and life satisfaction),[30] that may not be as salient or as operational in an older population.

However, the SIWB consistently had significant and expected correlations in direction and magnitude with other established measures related to subjective well-being. Spirituality had the highest inverse correlations with fear of death, depression, and perceived health status, which are supportive of affective and cognitive dimensions of subjective well-being in our instrument. A modest correlation with the GDS also suggested that the SIWB is a measure that is independent of depression.

Discriminant validity testing was used to differentiate the SIWB from religiosity. The total SIWB scale did not have a significant correlation with a measure of religiosity that has been used in a geriatric population,[27] although the life scheme subscale did have a significant but small ($r = .18$) correlation. The distinction between conceptualizations of religiosity and spirituality is a major consideration in measurement development,[31] and there are other measures of spirituality that have been used in clinical and research settings. Virtually all are contaminated by the inclusion of items

that assess religiosity.[9] For example, the Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being Scale contains items that measure the comfort and strength derived from religious faith, in addition to a sense of meaning, purpose, and peace in life.[32] The Systems of Belief Inventory, which was designed for use in quality of life and psychosocial research examining illness adjustment, measures religious and spiritual beliefs and practices and the social support that accompanies those beliefs and practices.[33]

The Spiritual Well-Being Scale has been used widely in health care settings and consists of 2 subscales: a religious well-being subscale and an existential well-being subscale.[34] Religious well-being is conceptualized as the quality of one's relationship with God, whereas existential well-being includes characteristics such as life purpose, life satisfaction, and positive and negative life experiences. Scores from the Spiritual Well-Being Scale have been inversely correlated with measures of psychological well-being.

However, much of this unpublished research has been compromised by ceiling effects or an inability to detect differences in those who score high on the scale, particularly in religious populations[35] and by a lack of peer review.[36]

Our study has several limitations. Our conceptualization of spirituality is a new construct based on qualitative research, and the study purpose was to evaluate the psychometric properties of a new instrument to measure this construct. As a result, we did not analyze or report normative data about the SIWB. Spirituality may have conceptual overlap with existing constructs, such as self-efficacy and alienation, and we did not evaluate the independence of our scale against these constructs. The SIWB was embedded in the final cohort of a longitudinal study, and we were unable to perform test-retest reliability to determine the stability and the responsiveness or sensitivity of the instrument over time. Due to subject burden, the parent study limited the inclusion of additional measures and the quality-of-life instruments were selected a priori.

Our cross-sectional design also did not allow us to draw any definitive conclusions about the causal relations of the variables. The study population consisted primarily of predominantly white, older patients with some functional limitations, and the generalizability of our findings to other populations is uncertain. However, good theory development and item construction from prior qualitative studies, a high α coefficient, and factor analysis support the validity and reliability of our measure.

In summary, the SIWB appears to be a valid and reliable measure of patient subjective well-being, one that is uncontaminated by the inclusion of religiosity. This instrument may be used in observational studies of chronic illness, aging, and end-of-life care that use spirituality as an explanatory or predictor variable of well-being. Future validation studies with multiple, diverse populations and a longitudinal design are needed to refine, modify, or verify the SIWB as an additional, complementary instrument of wellbeing.

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