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Measuring Meaning and Peace With the FACIT–Spiritual Well-Being Scale: Distinction Without a Difference?

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Abstract

The Functional Assessment of Chronic Illness Therapy–Spiritual Well-Being Scale (FACIT–Sp; Peterman, Fitchett, Brady, Hernandez, & Cella, 2002) has become a widely used measure of spirituality; however, there remain questions about its specific factor structure and the validity of scores from its separate scales. Specifically, it remains unclear whether the Meaning and Peace scales denote distinct factors. The present study addresses previous limitations by examining the extent to which the Meaning and Peace scales relate differentially to a variety of physical and mental health variables across 4 sets of data from adults with a number of chronic health conditions. Although a model with separate but correlated factors fit the data better, discriminant validity analyses indicated limited differences in the pattern of associations each scale showed with a wide array of commonly used health and quality-of-life measures. In total, the results suggest that people may distinguish between the concepts of Meaning and Peace, but the observed

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relations with health outcomes are primarily due to variance shared between the 2 factors. Additional research is needed to better understand the separate and joint role of Meaning and Peace in the quality of life of people with chronic illness.

Keywords

FACIT–Sp; construct validity; spirituality; factor analysis; health outcomes

Given the documented importance of religion and spirituality in the lives of most Americans (Gallup, 1995), health psychologists have increasingly incorporated these constructs into the nexus of psycho-social factors thought to influence individuals' ability to cope with, and adjust to, chronic illnesses such as cancer and HIV/AIDS (e.g., Carson, Soeken, Shanty, & Terry, 1990; Cotton, Levine, Fitzpatrick, Dold, & Targ, 1999; Mickley, Soeken, & Belcher, 1992; Riley et al., 1998; Tsuang, Simpson, Koenen, Kremen, & Lyons, 2007). As is the case in any nascent area of research, the conceptualization and measurement of the specific constructs within this domain have been a critical issue. For example, prior to the 1980s, religion was primarily conceptualized broadly as encompassing both individual and institutional elements, with both psychological and behavioral aspects. Although some have argued strongly that spirituality can only exist among people who are deeply religious (e.g., Koenig, 2008), other scholars have posited important distinctions between the concepts (e.g.,Hill et al., 2000; Sulmasy, 2006; Zinnbauer, Pargament, & Scott, 1999). From this perspective, religiousness is defined more narrowly as the participation in institutionally sanctioned beliefs and activities of a particular group, whereas spirituality is more frequently defined as the feelings stemming from the belief that one has a connection with a transcendent dimension of existence (e.g., a sense of meaning, sense of purpose; Peterman, Fitchett, Brady, Hernandez, & Cella, 2002). The importance of distinguishing among specific constructs would seem to be supported by the fact that an increasing number of Americans have identified themselves as spiritual but not religious (Shahabi et al., 2002; Zinnbauer et al., 1997).

Consistent with the developing theory in this area and these trends in the U.S. population, Peterman and coauthors developed the Functional Assessment of Chronic Illness Therapy–Spiritual Well-Being Scale (FACIT–Sp; Peterman, et al., 2002). A critical aspect of the conceptualization of the FACIT–Sp was the recognition that most existing measures of spirituality-based constructs were faith-specific (i.e., reflecting the beliefs or activities of a specific denomination). This faith-specific nature of existing measures is problematic for both theoretical and practical reasons. First, theoretically, spirituality is defined as distinct or independent of religiosity. Thus, the faith-specific nature creates a potential confound in the measure by assessing sources of variance due to both spirituality and religiosity. Second, the faith-specific content of items makes these measures unsuitable for use with members of other denominations. This is an increasingly important consideration given that religious diversity in the United States is increasing (Newport, 2009). Because of this, the FACIT–Sp has become one of the most commonly used measures of spiritual well-being in research with people who have a chronic illness.

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To date, three studies examining the psychometric properties of the FACIT–Sp have been published. First, based on a large, multiethnic sample of people with cancer or HIV/AIDS, Peterman et al. (2002) evaluated the empirical structure of the 12-item scale. Using a principal components analysis with varimax rotation, they found that two components best explained the observed variance. The first component, labeled *Meaning/Peace,* is composed of items such as "I feel a sense of purpose in my life" and "I am able to reach deep down inside myself for comfort." The second component, labeled *Faith,* is composed of items such as "I find strength in my faith." More recently, Canada, Murphy, Fitchett, Peterman, and Schover (2008) and Murphy et al. (2010) tested the hypothesis that the items on the Meaning/Peace subscale could be better represented as two conceptually distinct factors, with Meaning reflecting a cognitive dimension and Peace reflecting an affective dimension. In both a sample of women with ovarian cancer (N = 204; Canada et al., 2008) and a diverse sample of cancer survivors (N = 8,805; Murphy et al., 2010), confirmatory factor analyses indicated a three-factor solution fit better than a two-factor model. Additionally, these studies found that scoring the two factors of Meaning and Peace separately provided differential information. Scores on the Peace scale were more strongly related to mental health than were scores on the Meaning scale, whereas the opposite was true with respect to physical health. However, the limited number of outcome measures available in these two studies prohibited a thorough examination of the functional distinctiveness of the separate Meaning and Peace factors.

A clear understanding of the measurement properties of the FACIT–Sp is critical for further understanding the nature of the constructs in this domain, as well as for informing future research as well as practice. Thus, the purpose of the current study is to examine the extent to which the Meaning and the Peace factors are (a) empirically distinguishable and (b) functionally distinct. To do so, we submitted data from the Meaning and Peace scales of the FACIT–Sp to factor analyses and a series of incremental validity tests. That is, we first examined the empirical distinctiveness of the scales by examining their factor structure. Next, we examined the utility of positing separate factors by examining the pattern of relations of the Peace and Meaning scales with a variety of physical and mental health outcomes. We attempted to address limitations of prior studies by using four samples drawn from different locations and specific populations, using a wider range of outcomes against which to assess the distinctiveness of the scale scores and using more sophisticated tests of discriminant validity than in the past.

Method

Samples

Four archival samples with a combined N of 2,923 were gathered for the present analyses. Sample 1 comprised individuals diagnosed with cancer or HIV/AIDS recruited from the midwestern and southeastern areas of the United States and from a Caribbean country (Cella et al., 1998). Sample 2 comprised individuals with a recent cancer diagnosis who were receiving chemotherapy at one of three large medical centers in the midwestern United States (Peterman & Lecci, 2007). Sample 3 comprised individuals diagnosed with HIV/AIDS recruited from three cities in the midwestern and eastern regions of the United States

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(Cotton et al., 2006; Tsevat, 2006). Sample 4 comprised individuals admitted to the bone marrow transplantation unit of a large teaching hospital located in the southeastern United States (McQuellon et al., 2010). All four of these studies included the FACIT–Sp as part of their original design for the purpose of evaluating relations between spirituality and health outcomes, though none were designed for the specific purpose of evaluating the distinctiveness of the Meaning and Peace scales.

To ensure integrity of the variance/covariance matrix used in the analyses, we used listwise deletion across the 12 FACIT–Sp items. This screening procedure resulted in removing 113 participants across the four samples (38 from Sample 1, four each from Samples 2 and 3, and 67 from Sample 4), resulting in a final *N* of 2,810. Descriptive statistics for each of the four samples are shown in Table 1.

Measures

FACIT–Sp—The FACIT–Sp (Peterman et al., 2002) was completed by all participants across all samples. The FACIT–Sp is part of the comprehensive FACIT measurement system that includes generic and disease-specific health-related quality of life (HRQL) measures for most cancer types and numerous other chronic diseases (Cella & Nowinski, 2002). Using standard FACIT methodology (Cella, 1997), the 12 items that comprise the FACIT–Sp were written using the input of people with cancer or HIV/AIDS, as well as hospital chaplains and other health-care providers. Using a semistructured interview, participants were asked to provide information regarding the aspects of spirituality that were deemed most important to themselves and/or those who were living with chronic illnesses. Respondents described spirituality as a sense of meaning, harmony, peacefulness, strength, life purpose, and comfort with one's faith. Peterman et al. (2002) reported internal consistency reliability coefficients ranging from .81 to .88 and convergent validity estimates based on moderate to strong correlations with other measures of religiousness and spirituality. Subsequent work has demonstrated the scores to be sensitive to change following spiritually oriented (Bormann, Aschbacher, Wetherell, Roesch, & Redwine, 2009) or meaning-focused (Breitbart et al., 2010) interventions. Internal consistency reliability estimates for the current sample are shown in Table 1. For the current study, only the items on the Meaning and Peace scales are used. Item text is shown in Table 2.

Health-related outcome measures

Sample 1—Four outcome questionnaires were completed. The first, the Eastern Cooperative Oncology Group Performance Status Rating (ECOG-PSR; Zubrod et al., 1960), is one of the most widely used, single-item ratings of the ability of patients with cancer to complete activities of daily living. Activity level is rated on a 5-point scale (0 = *fully ambulatory without symptoms*; 1 = *fully ambulatory with symptoms*; 2 = *requiring rest for 1–49% of the waking day*; 3 = *requires rest 50–99% of the waking day*; and 4 = *requiring complete bed rest*). In this study, participants rated their own performance status (Pt. rated ECOG) and the treating oncologist also provided an ECOG-PSR score for each patient (Phys. rated ECOG). Both versions of this scale have been used frequently to validate other quality of life questionnaires (e.g.,Cella et al., 1993). The second questionnaire, the Woodcock Language Proficiency Battery—Passage Comprehension subtest (Woodcock,

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1991), is a widely used measure to assess reading proficiency in the English language. The third, the Functional Assessment of Cancer Therapy–General (FACT-G; Cella et al., 1993), is a 27-item self-report measure of quality of life containing four subscales: Physical Well-Being (PWB; e.g., “I feel ill”; α= .84), Social/Family Well-Being (SFWB; e.g., “I feel close to my friends,” “I get support from my family”; α= .74), Emotional Well-Being (EWB; e.g., “I feel sad,” “I worry about dying”; α= .76), and Functional Well-Being (FWB; e.g., “I am able work,” “I am sleeping well”; α= .85). Cella and colleagues (1993) have shown scores to discriminate patients on the basis of stage of disease, performance status rating, and hospitalization status and to be sensitive to change over time. They also showed scores from the subscales to differentiate groups known to differ along the dimensions of physical, functional, social, and emotional well-being. The fourth questionnaire, the Profile of Mood States–Short Form (McNair, Lorr, & Droppleman, 1992), is a 30-item self-report measure of subjective mood states containing six subscales (Tension, α= .80; Depression, α= .81; Anger, α= .86; Vigor, α= .89; Fatigue, α= .88; and Confusion, α= .76) that can be combined into a Total Mood Disturbance score (α= .89). The factorial validity of the scale has been demonstrated in six separate studies (e.g.,McNair et al., 1992).

Sample 2—Seven outcome measures were available in this data set. First, the four scales from the FACT-G (described above) were included. The internal consistency reliability estimate for scores in the current sample was PWB = .84, SFWB = .71, EWB = .79, and FWB = .86. Second, the Cancer Behavior Inventory–Brief (CBI-B; Merluzzi & Martinez-Sanchez, 1997) is a 14-item self-report measure of self-efficacy for coping with cancer and cancer-related tasks. The developers of the CBI-B reported strong corre-lations with a variety of measures of psychosocial adjustment providing preliminary evidence of validity. Coefficient alpha for the current sample was .85. Third, the Positive and Negative Affect Scale (PANAS; Watson, Clark, & Tellegen, 1988) is the most widely used, self-report measure of positive affect (10 items) and negative affect (10 items). The instruction set designed to assess state affect was used. Internal consistency in the current sample was .88 and .87 for positive affect and negative affect, respectively. Four, the Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) is a widely used five-item measure of global life satisfaction (current α= .86). Five, the general health perception subscale of the RAND-36 (Hays, Sherbourne, & Mazel, 1993; Ware & Sherbourne, 1992) is a five-item self-report measure of perception of current health compared with the respondent’s previous health and the health of others (current α= .76). Six, the Symptom Impact Inventory (Miller, Wilbur, Montgomery, Chandler, & Bezruczko, 2000–2001) is a 27-item self-report measure of the frequency of cancer-related symptoms (current α= .89). This scale has been shown to differentiate groups known to differ on symptom reporting in samples of women from America and the Soviet Union. Seven, the Functional Assessment of Chronic Illness Therapy–Fatigue Scale (Yellen, Cella, Webster, Blendowski, & Kaplan, 1997) is a 13-item scale assessing symptoms of fatigue due to chronic illnesses. In prior research it has demonstrated strong internal consistency (coefficient alpha range = .93–.95) as well as high correlations with other measures of fatigue (Cella et al., 2005). Internal consistency in the current sample was .94.

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Sample 3—Two outcome measures were available in this data set. First, the Center for Epidemiological Studies—Depression Scale (CES–D; Radloff, 1977) is a widely used 20-item self-report measure of the frequency of depressive symptoms. Second, the HIV/AIDS Targeted Quality of Life (HAT-QoL; Holmes & Shea, 1998) is a 34-item self-report measure of quality of life containing nine subscales (Overall Function, α= .86; Life Satisfaction, α= .87; Health Worries, α= .86; Financial Worries, α= .89; Medication Concerns, α= .84; Disclosure Worries, α= .81; HIV Mastery, α= .85; Provider Trust, α= .80; Sexual Function, α= .91). Provider Trust was not included in subsequent analyses.

Sample 4—Only the four scales from the FACT-G (described above) were included. The internal consistency reliability estimates in the current sample for each scale were PWB = .86, SFWB = .71, EWB = .82, and FWB = .84.

Analysis of Objective 1: Factor Structure

Confirmatory factor analyses were conducted by using maximum-likelihood estimation with AMOS software (Arbuckle & Wothke, 1996). Raw data were used as input for all analyses, allowing analysis of the variance–covariance matrix. Overall model fit was assessed via a variety of indices. First, we used the chi-square statistic as well as the chi-square/degrees of freedom ratio, which ameliorates the chi-square index's sensitivity to sample size. We also used the Tucker–Lewis index (TLI; Tucker & Lewis, 1973) and the root-mean-square error of approximation (RMSEA; Steiger & Lind, 1980). In addition, the comparative fit index (CFI; Bentler, 1990) and the normed fit index (NFI; Bentler & Bonnett, 1980) were employed, given their generalized use in the literature. TLI, CFI, and NFI values equal to or greater than .95 are generally considered indicative of good fit (Hu & Bentler, 1999), while .90 is an appropriate lower bound of adequate fit. For the RMSEA, values smaller than .05 are indicative of good fit, and .08 represents an upper bound for acceptable fit (Browne & Cudeck, 1992). Although change in the chi-square value can be used to detect a significant change in model fit when comparing models, a simulation study by Cheung and Rensvold (2002) showed that to be a poor index. Rather, on the basis of their analyses, they suggested a change greater than .01 in the CFI value is an appropriate criterion to detect a significant change in model fit. Additionally, because confidence intervals can be computed for the RMSEA, model fit can be compared by examining whether the RMSEA confidence intervals overlap.

Because our concern was with the distinctiveness of the Meaning and Peace scales, we did not analyze the items from the Faith scale. Thus, we tested two models: a one-factor model positing that the Meaning and Peace scales predominantly share a common source of variance and a two-factor model positing that they assess predominantly unique sources of variance.

Analysis of Objective 2: Functional Distinctiveness

To evaluate the functional utility or distinctiveness of Meaning and Peace, we conducted four analyses. First, we examined the degree of association (i.e., correlation) between the Meaning and Peace factors estimated in the two-factor model. Strong correlations between these factors would raise concern about the degree to which these factors reflect a

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functionally important distinction. Second, we examined differences in the zero-order correlations between each of the two scales, Meaning and Peace, and various health outcome measures. For each outcome, we tested the difference between the correlation with Meaning and the correlation with Peace for significance using William's (1959) *t* test for differences in dependent correlations. If there were a functional distinction between Meaning and Peace, we would expect many of the correlations to be significantly different.

Importantly, we also conducted a third test to determine whether Meaning and Peace showed the same pattern of correlations across the set of outcomes by utilizing the method of correlated vectors (Jensen, 1998, Appendix B). A correlated vector analysis correlates two statistical vectors containing correlations between a given measure (e.g., Meaning) and a variety of other scales. The outcome variables (i.e., health outcomes) become the units of observation, and the vector of correlations with Meaning is correlated with the vector of correlations with Peace. Thus, like any correlation, it indexes the degree of linear association between the two sets of scores. In this case, the "scores" are observed criterion-related validity (CRV) coefficients, and the units of observation are the outcomes. Additionally, like all correlations, this analysis assesses the consistency in rank-order of CRV coefficients independent of differences in average magnitude. Therefore, differences in the degree to which Meaning and Peace are saturated with a common factor cannot bias the evaluation of their pattern. Strong vector correlations would indicate that the Meaning and Peace scales are functionally quite similar and likely differ only in the degree to which they measure some common source of variance. Weak vector correlations would indicate that Meaning and Peace assess unique constructs that have functionally different associations with various outcomes. In essence, one can conceive of this as a test of discriminant validity. If Meaning and Peace are functionally distinct, they should show evidence of discriminant validity (i.e., show different patterns of correlations with a set of external variables).

The previous three analyses do not assess the degree to which the Meaning and Peace scales each demonstrate incremental validity over the other. Thus, we also examined the degree to which the two scales contribute uniquely (relative to the other) to the variance in the health outcomes. For each outcome, we conducted a pair of hierarchical regressions in which we first entered Peace followed by Meaning (to assess the unique impact of Meaning) and then reversed the order of entry such that we entered Meaning followed by Peace (to assess the unique impact of Peace). If the Peace and Meaning scales are assessing unique sources of variance, they should each demonstrate incremental validity over the other. On the other hand, if neither consistently accounts for additional variance, over and above the other, it would indicate that the scales largely assess a single common source of variance.

Results

Factor Structure

We fit each of the two models to each sample independently. Results are shown in Table 3. In all four samples, the two-factor model fits better than the one-factor model. Specifically, the TLI, CFI and NFI all exceed the minimum .90 for acceptable fit in all four samples for the two-factor model, whereas the one-factor model does so only in Sample 3. In fact, the two-factor model meets the .95 threshold for good fit in two of the samples. Comparatively,

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the change in fit is significantly better going from the one-factor to the two-factor model in all four samples (the change in CFI is larger than .01). Likewise, although the RMSEA reaches the .08 criterion for acceptable fit only in Sample 4, the RMSEA is significantly smaller for the two-factor solution in all four samples (i.e., the confidence intervals do not overlap). Thus, the two-factor model is accepted as the better fitting model. Standardized factor solutions for this best fitting model are found in Table 2.

Functional Distinctiveness

As we described above, we first examined the correlations among the factors of Meaning and Peace (see the lower portion of Table 2). Across all four samples, the factors reflected by the Meaning and Peace scales were highly correlated with one another, with correlation coefficients ranging from .61 to .87. This indicates that the Meaning and Peace scales share 36% to 77% of their reliable variance. Although the two-factor model shows a superior fit, the correlations between the factors is quite high, particularly in Samples 1, 3, and 4. This does warrant some caution, as correlations that high may suggest that overfactoring has taken place.

The next step was to examine the zero-order correlations between scores from each of the two scales, Meaning and Peace, and the various health outcome measures. Correlations within each of the four samples can be found in Table 4. Across the 41 pairs of correlations, Peace showed larger correlations in 18 cases (44%), Meaning showed larger correlations in three cases (7%), and the two did not differ significantly in 20 cases (49%).

Independent of magnitude differences in pairs of correlations, the correlated vectors analysis determines whether Meaning and Peace showed the same pattern of correlations across the set of outcomes. This test better evaluates the degree to which the two scales demonstrate substantively different patterns of CRV coefficients. In three of the four samples, the vectors of correlations were strongly correlated, suggesting that the Meaning and Peace scales are functionally quite similar (see Table 4). The exception is Sample 4, but given that there are only five health outcomes assessed in this sample, the vector correlation is based on an $N = 5$. Thus, it should be interpreted very cautiously.

Still, the strong vector correlations do not rule out the possibility that each scale also carries some unique variance relevant to the health outcomes. That is, the previous analyses do not assess the degree to which the Meaning and Peace scales demonstrate incremental validity over the other. Thus, we examined the degree to which the two scales contribute uniquely (relative to the other) to the variance in the health outcomes. Results are shown in Tables 5-8. In each table, the total R^2 based on the entry of both scales is shown in the first column for a reference point concerning how much variance in total is being explained. For most outcomes, the Meaning and Peace scales accounted for moderate amounts of variance (Average $R^2 = .26$, range = .03 to .57). In terms of unique variance, these analyses showed that, with a few exceptions, Peace accounted for proportionally more unique variance than did Meaning across the four samples. Said differently, with a few exceptions, Meaning (Average $\Delta R^2 = .03$, range = .00 to .11) contributed less unique association with health outcomes above that were already captured by Peace. In contrast, Peace (Average $\Delta R^2 = .09$,

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range = .00 to .32) tended to contribute more to the association with health outcomes above Meaning.

For example, in Sample 1, after controlling for Peace, Meaning accounted for only an additional 1% of unique variance in the FACT-G EWB score (see Table 6). On the other hand, after controlling for Meaning, Peace accounted for an additional 18% of unique variance in emotional well-being. In this instance, Peace uniquely accounted for half of the total variance explained by the pair (R^2 = .36), whereas Meaning uniquely accounted for only 2.8% of the variance accounted for by both scales. Said differently, Peace alone accounted for 35% of the variance in EWB scores, whereas Peace and Meaning together accounted for 36% of the variance (only a 1% increase). In contrast, Meaning alone accounted for only 18% of the variance in EWB scores, whereas the pair accounted for 36% of the variance. In other cases, neither scale appeared to provide substantial unique effects over the other, indicating that it is the variance they share that is related to these outcomes. This pattern of results suggests that the Peace scale alone would often capture most of the variance relevant to these health outcomes (i.e., the variance shared with Meaning and its own unique effects), whereas Meaning appears to be related to these health outcomes due primarily to the variance it shares in common with Peace.

Nevertheless, there were exceptions to this general result. The SFWB subscale of the FACT-G (Samples 1 and 2), the SWLS (Sample 2), and the Financial and Health Worries subscales of the HATQoL (Sample 3) showed the opposite trend. For example, after controlling for Peace in Sample 2, Meaning contributed an additional 10% of unique variance in SFWB; however, after controlling for Meaning, Peace contributed only an additional 3% of unique variance. In this instance, Meaning alone accounted for 19% of the variance in SFWB scores, whereas the two scales combined accounted for only 22% (R^2 = .22). Likewise, after controlling for Peace, Meaning uniquely contributed an additional 11% of the variance in SWLS scores; however, after controlling for Meaning, Peace accounted for only an additional 4% of the variance. Again, Meaning alone (R^2 = .23) accounted for most of the total variance explained by the two scales combined (R^2 = .27). However, we caution against overinterpretation of these few cases, as the listwise error rate across 41 tests might account for these findings.

Discussion

The results of the current study confirm that Meaning and Peace are highly correlated yet empirically distinct factors. These results are consistent with more recent studies using factor analyses (e.g., Canada et al., 2008; Murphy et al., 2010) and contradict the results of Peterman and coworkers (2002), who found a combined Meaning and Peace component. However, our additional analyses cast some doubt on whether this distinction has a functional difference with respect to health-related outcomes. Of the 41 pairs of correlations with health-related outcomes, approximately half were not significantly different from each other. Further, the vector correlations were near unity in three of the four samples, indicating that the Meaning and Peace scales are functionally highly similar and may provide largely redundant information. The strong vector correlations, combined with the tests of magnitude differences, indicate that Peace and Meaning are likely related to the outcomes mostly to the

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degree that they each capture the source of variance common to both. That is, it is exceedingly unlikely that these two scales measure two distinct sources of variance but yet show almost identical patterns of covariation across a range of health outcomes. To say that differently, one would have to posit almost identical nomological networks to explain these results while holding to the hypothesis that the factors observed in the factor analysis reflect distinct constructs. Doing so would necessarily violate the canon of parsimony as well as a key criterion for construct distinction (Cronbach & Meehl, 1955; Messick, 1989).

In addition, the tests of incremental validity, which can also be described as tests of discriminant validity, demonstrate that after controlling for the variance in health outcomes that is captured by the Peace scale, Meaning contributes relatively little additional unique variance. The opposite was seen with Peace; when the variance due to Meaning was controlled, Peace continued to show relatively sizeable incremental validity coefficients in many cases. Thus, it would appear that the variance that makes Meaning distinct from Peace does not have much functional value in terms of predicting or influencing the health outcomes beyond that due to Peace. With respect to health outcomes, our analyses suggest that it is the variance that Meaning and Peace share in addition to the unique variance associated with Peace that is potentially most important.

A few exceptions to this general conclusion were found and should be noted. When considering the SFWB and SWLS scales, Meaning tended to contribute more unique variance than did Peace. This notable difference from the overall trend may be indicative of the kind of influences that are most strongly related to Meaning. Whereas the remaining outcomes are generally related to internal states such as self-efficacy and positive and negative affect, social-family well-being and satisfaction with life reflect more external factors, such as support from others and satisfaction with conditions of one's life. Without a doubt, the most common answer to a typical clinical question of sources of meaning in one's life is "my children" or "my family." There is a growing body of literature examining the role of religion in creating meaning following a traumatic event (e.g., Edmondson, Park, Blank, Fenster, & Mills, 2008; Park, Chmielewski, & Blank, 2010). Interventions designed to increase a sense of meaning in life often focus on important relationships in patients' lives (Breitbart, 2002; Breitbart et al., 2010). Thus, it may be that Meaning reflects an important, unique, but somewhat specialized dimension.

Limitations

Limitations to the generalizability of our findings should be noted. First, it should be kept in mind that the samples we used were composed of individuals previously diagnosed with a chronic illness (cancer or HIV). As such, caution is warranted in generalizations to populations that are not chronically ill. Second, although there was a moderate amount of demographic diversity in our samples, they were predominantly European American and African American, as well as predominantly Christian. Future studies should seek to conduct analyses in other ethnic and religious/spiritual populations to ensure measurement invariance. Third, it must be noted that conclusions regarding the extent to which Meaning and Peace scales differentially relate to health outcome measures are necessarily restricted by the range and nature of outcomes assessed here. It is possible that if other measures of

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health were used, different findings would emerge. Finally, although not specific to this study, we do wish to draw readers' attention to a characteristic of both the two- and three-factor models of the FACIT–Sp. Much like other general health-related quality of life measures, which are summary indices of the relevant constructs, the FACIT–Sp was designed to be a brief, general measure of spiritual well-being. Just as the physical well-being subscale of an HRQL measure does not provide an in-depth assessment of all possible physical symptoms, the FACIT–Sp does not assess many of the identified components of spirituality (e.g., connect-edness and transcendence). Researchers and clinicians interested in a more detailed assessment of spirituality are referred to the rapidly growing literature on this topic (e.g., Cotton et al., 2006; Hill et al., 2000; Koenig, 2008).

Conclusions and Future Directions

Practically speaking, these results have implications for researchers and clinicians who are interested in using the FACIT–Sp. Although Meaning scores may not contribute much unique explanatory power beyond Peace scores to the understanding of the role that spiritual well-being plays in health, the factor analytic results indicate that people do distinguish between these concepts. As such, this distinction may have important clinical implications for reasons other than predicting health-related outcomes associated with chronic illness. Nonetheless, when predicting health outcomes, the Peace scale alone will give a bigger "bang for the buck," since it is likely to contribute more than Meaning to the prediction of important health outcomes. On the other hand, the results could be interpreted as support for Koenig's (2008) criticism that at least part of the FACIT–Sp (the Peace subscale) is simply another measure of emotional well-being, not a spiritual dimension at all. Further investigation of this larger construct validity question is clearly warranted: Qualitative studies would be useful for exploring the distinctions that people make between feeling peaceful and not feeling depressed, as well as whether people consider "peace" to be associated with their spirituality. Because the FACIT–Sp was designed, in part, to be an inclusive measure of these constructs among people of different religious affiliations, or with none at all, further work should examine the nature of the concept of spiritual well-being.

Until this future work is completed, we suggest that interested researchers and clinicians utilize the full 12-item measure, scoring and reporting results from the three subscales separately, as well as the combined Meaning and Peace subscale. This will add to the general knowledge base of the relationships between spiritual well-being dimensions themselves and to other health measures. In addition, we suggest that further psychometric evaluation be conducted by comparing the FACIT–Sp with spirituality measures that more explicitly incorporate the influence of a belief in, and relationship with, deities (e.g., Spiritual Well-Being Scale (Paloutzian & Ellison, 1982).

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Table 1
Descriptive Statistics for the Four Samples Analyzed

Variable	Sample 1	Sample 2	Sample 3	Sample 4
Sample size (*N*)	1,538	201	446	625
Age				
M	54.41	54.87	43.73	50.17
SD	13.69	12.81	8.45	13.47
Gender (%)				
Female	52.4	65.2	14.1	41.0
Race (%)				
White	24.3	67.2	45.3	84.5
Black	30.7	24.4	50.0	13.3
Hispanic	45.1	2.5	2.2	0.0
Asian	0.0	4.5	0.4	0.3
Other	0.0	1.5	2.0	1.0
Missing	0.0	0.0	0.0	1.0
Denomination (%)				
Catholic	42.4	29.4	14.3	3.5
Protestant[a]	27.0	30.8	45.5[b]	55.1[c]
Jewish	1.2	12.9	1.6	0.0
Other	23.0	13.9	27.1	17.6
None/Atheist	6.3	12.9	11.4	0.0
Missing	0.0	0.0	0.0	23.8
FACIT–Sp scores				
Meaning *M*	13.36	14.19	11.53	14.42
SD	2.79	2.41	3.93	2.21
α	.66	.71	0.81	.64
Peace *M*	11.89	11.54	9.70	12.05
SD	3.34	3.69	4.11	3.40
α	.74	.86	.82	.80

Note. FACIT–Sp = Functional Assessment of Chronic Illness Therapy–Spiritual Well-Being Scale.

[a] Protestant includes Baptists. For two samples, these were identified as a separate group.

[b] Baptists = 24.0% of total sample.

[c] Baptists = 34.9% of the total sample.

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Table 2
Confirmatory Factor Analysis Solutions for Best Fitting Model by Sample

	Sample 1		Sample 2		Sample 3		Sample 4	
Item	**Meaning**	**Peace**	**Meaning**	**Peace**	**Meaning**	**Peace**	**Meaning**	**Peace**
"I have a reason for living"	.66		.58		.82		.56	
"My life has been productive"	.65		.69		.79		.64	
"I feel a sense of purpose in my life"	.80		.83		.88		.81	
"My life lacks meaning and purpose"[a]	.28		.45		.44		.40	
"I feel peaceful"		.59		.71		.81		.68
"I have trouble feeling peace of mind"[a]		.35		.65		.42		.49
"I feel a sense of harmony within myself"		.85		.86		.81		.78
"I am able to reach down deep into myself for comfort"		.84		.92		.88		.92
Factor correlations Peace	.80		.61		.87		.76	

[a]Item has been reverse-scored.

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Table 3

Results of Single-Group Confirmatory Factor Analyses by Sample

									RMSEA 90% CI	
Data set	**Model**	***df***	**χ^2**	**χ^2/df**	**TLI**	**CFI**	**NFI**	**RMSEA**	**Low**	**High**
Sample 1	One factor	20	521.62	26.08	.83	.88	.87	.128	.118	.137
	Two factor	19	306.35	16.12	.90	.93	.93	.099	.090	.109
Sample 2	One factor	20	153.64	7.68	.72	.80	.78	.183	.156	.210
	Two factor	19	52.64	2.77	.93	.95	.92	.094	.064	.125
Sample 3	One factor	20	174.38	8.719	.89	.92	.91	.132	.114	.150
	Two factor	19	90.593	4.77	.95	.96	.95	.092	.073	.111
Sample 4	One factor	20	213.11	10.66	.84	.83	.88	.124	.110	.140
	Two factor	19	92.68	4.88	.94	.96	.95	.079	.063	.095

Note. TLI = Tucker–Lewis index; CFI = comparative fit index; NFI = normed fit index; RMSEA = root-mean-square error of approximation; CI = confidence interval.

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Table 4

Zero–Order Correlations Between FAC1T–Sp Meaning and Peace Scales and Health Outcomes by Sample

	Sample 1		Sample 2		Sample 3		Sample 4	
Outcome	**Meaning**	**Peace**	**Meaning**	**Peace**	**Meaning**	**Peace**	**Meaning**	**Peace**
FACIT Peace	.61		.45		.73		.58	
FACT-G Physical Well-Being	.25[a]	.32	−.28	−.32			.29[a]	.41
FACT-G Social/Family Well-Being	.27[a]	.22	.44	.35			.47	.46
FACT-G Emotional Well-Being	.42[a]	.60	.40[a]	.69			.42[a]	.68
FACT-G Functional Well-Being	.47	.49	.39[a]	.57			.40[a]	.56
FACT-G Total	.51[a]	.59	.48[a]	.63			.47[a]	.63
Pt. Rated ECOG	−.18	−.17						
Phys. Rated ECOG	−.15	−.12						
Woodcock	.11[a]	−.03						
POMS: Tension	−.29[a]	−.51						
POMS: Depression	−.40[a]	−.55						
POMS: Anger	−.31[a]	−.47						
POMS: Vigor	.38	.42						
POMS: Fatigue	−.27[a]	−.41						
POMS: Confusion	−.43[a]	−.51						
POMS: Total	−.45[a]	−.61						
HAT-QoL Overall Function					.44	.42		
HAT-QoL Life Satisfaction					.67	.67		
HAT-QoL Health Worries					.45	.43		
HAT-QoL Financial Worries					.51	.46		
HAT-QoL Medical Concerns					.48[a]	.36		
HAT-QoL HIV Mastery					.33	.35		
HAT-QoL Disclosure Worries					.27	.25		
HAT-QoL Sexual Function					.31	.28		
CES-Depression					−.69	−.71		
CBI			.42[a]	.57				
FACIT–Fatigue			.31	.43				
PANAS Positive Affect			.40	.44				
PANAS Negative Affect			−.43[a]	−.66				
General Health Perception (RAND-36)			.38	.36				
Satisfaction with Life Scale			.48	.40				
Symptom Impact Inventory			−.34	−.31				

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	Sample 1		Sample 2		Sample 3		Sample 4	
Outcome	**Meaning**	**Peace**	**Meaning**	**Peace**	**Meaning**	**Peace**	**Meaning**	**Peace**
Correlation of vectors	.986		.959		.995		.52	

Note. FACIT–Sp = Functional Assessment of Chronic Illness Therapy–Spiritual Well-Being Scale; FACT-G = Functional Assessment of Cancer Therapy–General; Pt. = participant; ECOG = Eastern Cooperative Oncology Group; Phys. = physician; Woodcock = Woodcock Language Proficiency Battery–Passage Comprehension; POMS = Profile of Mood States; HAT-QoL = HIV/AIDS Targeted Quality of Life; CES= Center for Epidemiological Studies; CBI = Cancer Behavior Inventory; PANAS = Positive and Negative Affect Scale.

[a]Indicates corresponding correlations are significantly different from each other based on Williams (1959) *t* test for dependent correlations.

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Table 5

Test for Incremental Validity of Meaning and Peace Scales (Sample 1)

Outcome	Total R^2 for Meaning and Peace	ΔR^2 for Meaning (over Peace)	ΔR^2 for Peace (over Meaning)
Pt. Rated ECOG	.04	.01	.01
Phys. Rated ECOG	.03	.01	.00
Woodcock	.03	.03	.02
FACT-G Physical Well-Being	.10	.01	.04
FACT-G Social/Family Well-Being	.08	.03	.00
FACT-G Emotional Well-Being	.36	.01	.18
FACT-G Functional Well-Being	.29	.04	.07
FACT-G Total	.38	.04	.12
POMS: Tension	.26	.00	.17
POMS: Depression	.31	.01	.15
POMS: Anger	.22	.00	.13
POMS: Vigor	.20	.03	.06
POMS: Fatigue	.17	.00	.09
POMS: Confusion	.28	.02	.10
POMS: Total	.38	.01	.01

Note. All values shown are the increment in R^2 attributable to Meaning (or Peace) after controlling for Peace (or Meaning). Pt. = participant; ECOG = Eastern Cooperative Oncology Group; Phys. = physician; Woodcock = Woodcock Language Proficiency Battery—Passage Comprehension; FACT–G = Functional Assessment of Cancer Therapy-General; POMS = Profile of Mood States.

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Table 6
Test for Incremental Validity of Meaning and Peace Scales (Sample 2)

Outcome	Total R^2 for Meaning and Peace	ΔR^2 for Meaning (over Peace)	ΔR^2 for Peace (over Meaning)
FACT-G Physical Well-Being	.13	.02	.05
FACT-G Social Well-Being	.22	.10	.03
FACT-G Emotional Well-Being	.49	.01	.32
FACT-G Functional Well-Being	.35	.02	.20
FACT-G Total	.45	.05	.22
CBI	.37	.04	.19
FACIT–Fatigue	.20	.02	.11
PANAS Positive Affect	.25	.05	.09
PANAS Negative Affect	.46	.02	.27
General Health Perception (RAND-36)	.19	.06	.05
Satisfaction With Life Scale	.27	.11	.04
Symptom Impact Inventory	.15	.05	.03

Note. All values shown are the increment in R^2 attributable to Meaning (or Peace) after controlling for Peace (or Meaning). FACT-G = Functional Assessment of Cancer Therapy–General; CBI = Cancer Behavior Inventory; FACIT–Fatigue = Functional Assessment of Chronic Illness Therapy–Fatigue Scale; PANAS = Positive and Negative Affect Scale.

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Table 7
Test for Incremental Validity of Meaning and Peace Scales (Sample 3)

Outcome	Total R^2 for Meaning and Peace	ΔR^2 for Meaning (over Peace)	ΔR^2 for Peace (over Meaning)
HAT-QoL Overall Function	.22	.04	.02
HAT-QoL Life Satisfaction	.52	.07	.07
HAT-QoL Health Worries	.22	.04	.03
HAT-QoL Financial Worries	.28	.07	.01
HAT-QoL Medical Concerns	.23	.10	.00
HAT-QoL HIV Mastery	.13	.01	.03
HAT-QoL Disclosure Worries	.08	.02	.01
HAT-QoL Sexual Function	.10	.02	.01
CES-Depression	.57	.06	.09

Note. All values shown are the increment in R^2 attributable to Meaning (or Peace) after controlling for Peace (or Meaning). HAT-QoL = HIV/AIDS Targeted Quality of Life; CES = Center for Epidemiological Studies.

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Table 8
Test for Incremental Validity of Meaning and Peace Scales (Sample 4)

Outcome	Total R^2 for Meaning and Peace	ΔR^2 for Meaning (over Peace)	ΔR^2 for Peace (over Meaning)
FACT-G Physical Well-Being	.17	.00	.09
FACT-G Social/Family Well-Being	.27	.06	.06
FACT-G Emotional Well-Being	.46	.00	.29
FACT-G Functional Well-Being	.33	.01	.17
FACT-G Total	.41	.02	.20

Note. All values shown are the increment in R^2 attributable to Meaning (or Peace) after controlling for Peace (or Meaning). FACT-G = Functional Assessment of Cancer Therapy–General.