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Existential Well-Being

Spirituality or Well-Being?

Anja Visser, PhD,* Bert Garssen, PhD,* and Ad JJM Vingerhoets, PhD†

Abstract: Measures of spirituality often contain the dimension existential well-being (EWB). However, EWB has been found to overlap with emotional and psychological well-being. Using the Spiritual Attitude and Involvement List (SAIL), we have further investigated the overlap between aspects of spirituality and of well-being among patients with cancer, by determining a) the divergent validity of the subscales of the SAIL compared with a well-being questionnaire and b) the differences in their associations to changes in pain and fatigue, and the occurrence of negative life events. Our findings suggest that a sense of trust that one is able to cope with difficulties of life belongs to the realm of well-being, instead of spirituality. Other aspects, such as a sense of meaning in life, seem more similar to spirituality than to well-being. These results can bring researchers a step further toward constructing “pure” spirituality and well-being measures, which will allow them to investigate the (causal) relationship between these constructs.

Key Words: Spirituality, well-being, definition, construct validity

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[Instruments used to measure spirituality] are heavily contaminated with questions assessing positive character traits or mental health: optimism, forgiveness, gratitude, meaning and purpose in life, peacefulness, harmony, and general well-being. Spirituality, measured by indicators of good mental health, is found to be correlated with good mental health. ... Such associations are meaningless and tautological. Either spirituality should be defined and measured in traditional terms as a unique, uncontaminated construct, or it should be eliminated from use in academic research. (Koenig, 2008, p. 349)

The concern voiced by Koenig (2008) seems to stem from a difference in assumptions between the researchers who construct spirituality questionnaires and those who use them to investigate the relationship between spirituality and mental health. The observation that spirituality scales often contain questions that reflect positive mental health indicates that the scale constructors assume that spirituality and mental health are part of the same domain of psychological functioning (MacDonald, 2011). For example, Kapuscinski and Masters (2010) found in their critical review of 24 spirituality questionnaires that 95% included an emotional component, and 41% of the 22 definitions provided with these scales made mention of feelings and perceptions such as love, closeness, and reverence. Other studies have confirmed these findings (Garssen and Visser, 2016; Garssen et al., 2016). In the general population, spirituality is also often defined in terms of mental health and positive dimensions of life,

such as love, harmony, self-understanding, and acceptance (Berghuijs et al., 2013; Hvidt et al., 2012; Mattis, 2000). However, many researchers try to determine whether spirituality causes, or at least predicts, mental health. Such a hypothesis reflects an underlying assumption that spirituality and mental health are two distinct concepts or domains that are independent of each other, though they may be (causally) related (MacDonald, 2011). Unfortunately, this hypothesis cannot be tested if the available spirituality scales were made under the assumption that spirituality and mental health are (part of) the same concept.

To establish with more certainty whether spirituality and mental health belong to the same domain or to different domains that are causally related, we need to construct spirituality scales that do not contain items that measure mental health. This means that we need to determine which aspects of our current conceptualizations of spirituality are distinguishable from mental health and which belong to the same domain as mental health.

A recent study by Migdal and MacDonald (2013) has already made a step in the right direction. They investigated the overlap between a 30-item version of the Expressions of Spirituality Inventory (ESI; MacDonald, 1997, 2000a, 2000b) and several measures of well-being. The ESI contains five subscales that were constructed on the basis of a factor analytical synthesis of 20 existing measures of spirituality and related constructs. Therefore, this measure might be considered representative of a large proportion of the conceptualizations of spirituality. It was found that only the subscale existential well-being (EWB) showed overlap with aspects of well-being or mental health: self-esteem, happiness, overall wellness, life satisfaction, and various dimensions of psychological well-being as defined by Ryff (1989). Together, these measures explained 54% of the variance in EWB (Migdal and MacDonald, 2013). Earlier, Macdonald (2000a, 2000b) found that EWB is strongly negatively correlated with neuroticism ($r = -0.66$), which also suggests some degree of overlap between EWB and a low degree of negative emotionality.

Existential well-being as defined by Macdonald (2000a, 2000b) “pertains to spirituality as expressed through a sense of meaning and purpose for existence, and a perception of self as being competent and able to cope with the difficulties of life and limitations of human existence.” (p. 187). Existential well-being stems from the concept of spiritual well-being, which reflects the extent to which people live in harmony in relationship with themselves, others, nature, and the transcendent (National Interfaith Coalition on Aging, 1975). In questionnaires that measure spiritual well-being, EWB is operationalized in terms of an experience of meaning, purpose, value, and satisfaction in life (Edmondson et al., 2008; Ledbetter et al., 1991; Mazzotti et al., 2011; Paloutzian and Ellison, 1982).

In our own research into the relationship between spirituality and well-being among patients with cancer, we assume that spirituality and well-being are two separate domains. We used a questionnaire—the Spiritual Attitude and Involvement List (SAIL)—that is based on the following definition of spirituality: “[spirituality is] one’s striving for and experience of connectedness with the essence of life” (p. 142), which can be found in relationship with oneself, others, nature, and/or the transcendent (de Jager Meezenbroek et al., 2012). Although care has been taken during scale construction to not directly refer to positive feelings and states, such as love, peace, harmony, or satisfaction with

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life, the questionnaire does assess several aspects that resemble EWB, such as the experience of meaning and purpose in life, the experience of trust in one's ability to cope with difficulties in life, and the experience of acceptance that some things are outside of one's control and that life is not always without tragedy. This resemblance between aspects of the SAIL and EWB raises the suspicion that the SAIL might overlap with measures of well-being as well, potentially leading to tautological findings of investigations into their (causal) relationship. In our research, we have assessed well-being with the Health and Disease Inventories (HDI) subscale "joy in life" (JiL) (de Bruin and van Dijk, 1996). This questionnaire assesses positive emotions and a sense of vitality. Thus, in the current study, we examine the overlap between the SAIL and the HDI subscale JiL.

The purpose of the current study was not only to ensure that we ourselves do not reach tautological conclusions but also to provide more information on the construct validity of the SAIL and to provide guidance to other researchers on which aspects of spirituality might be conceptually related to well-being. With this knowledge, spirituality questionnaires can be devised that measure spirituality as a unique, uncontaminated construct that can be used to uncover the nature of the relationship between spirituality and well-being or mental health.

Because we have only one measure available for each concept, we apply two different statistical tests to increase the credibility of the findings. First, we perform confirmatory factor analyses to investigate the divergent validity of the SAIL compared with the well-being questionnaire. Second, we determine the strength of the associations between changes in spirituality and well-being during two periods of 6 months with changes in factors that are known to influence well-being: physical complaints (pain and fatigue) and the occurrence of negative life events. Symptoms such as pain and fatigue and the experience of negative life events are known to negatively affect emotional well-being and vitality (Arndt et al., 2006; Clough-Gorr et al., 2007; Laubmeier and Zakowski, 2004; den Ouden et al., 2009; Wootten et al., 2007). Therefore, if spirituality and well-being are two different concepts, we would expect the aspects of spirituality to be less strongly correlated than well-being with changes in pain, fatigue, and the experience of negative life events.

By comparing the results from the different types of tests, we will be able to understand more clearly how the various aspects of spirituality relate to well-being and if these concepts show overlap.

METHODS

Participants

In the context of a larger study on the relationship between spirituality and well-being among patients with cancer, approximately 1489 persons with cancer were invited to participate in the study and to fill out a set of questionnaires at three time points over the course of a year. Participants were recruited from four hospitals and two radiotherapy institutions in the Netherlands by a member of the medical staff. Patients were eligible for participation if they met the following criteria: they were 18 years or older, they were Dutch speaking, they were treated for cancer with a curative intent, their primary treatment for cancer was surgery or radiotherapy, their treatment had not started more than 2 months previously, they did not have a psychiatric disorder, and they did not have a brain tumor.

During recruitment, we had attempted to limit a selection bias based on spiritual involvement by urging the members of the medical staff to approach all patients, and certainly not only those patients with an open mind with respect to spirituality. In addition, the information sheet for eligible patients included the following sentences: "Everyone who is treated for cancer is cordially invited to participate in this study. Even if you consider spirituality to be a vague concept or if you

feel that's 'not my sort of thing' you can contribute to the study." This seemed to have been effective, as the proportions of Protestants, Roman Catholics, adherers to another philosophy of life, and persons who did not adhere to a denomination in the study sample were comparable to those in the general Dutch population (Statistics Netherlands, 2010).

About one third of the patients who were approached for participation in the study provided written informed consent and filled out the

TABLE 1. Sociodemographic and Medical Characteristics of the Study Sample Compared With the Dutch Population

	Study Sample (N = 460)	Normative Data
Median age in years (range)	59 (24–84)	60–74 (0–75) ^a
Sex (%)		
Male	121 (27)	52 ^b
Female	323 (73)	48
Educational level (%)		
Low	83 (19)	
Middle	181 (41)	
High	177 (40)	
Denomination (%)		
Protestant	119 (27)	18 ^c
(Roman) Catholic	111 (25)	28
Other	45 (3.4)	10
None	168 (38)	44
Considers oneself religious (%)		
Yes	233 (53)	
No	187 (42)	
Doubt	23 (5)	
Considers oneself spiritual (%)		
Yes	220 (50)	
No	186 (42)	
Doubt	35 (8)	
Type of cancer (%)		
Breast	275 (62)	14 ^b
Prostate	52 (12)	11
Digestive system	80 (18)	22
Other	33 (8)	53
Mean scores on the SAIL (SD)		
Meaningfulness	4.42 (0.71)	
Trust	4.42 (0.64)	
Acceptance	4.51 (0.73)	
Caring for others	4.69 (0.63)	
Connectedness with nature	4.73 (0.93)	
Transcendent experiences	2.44 (1.07)	
Spiritual activities	3.00 (1.27)	
Mean score on the JiL (SD)	57 (6.40)	

^aMedian age of all new patients with cancer with an invasive tumor in the Netherlands in 2009 and 2010, Comprehensive Cancer Centre (2011), www.cijfersoverkanker.nl.

^bPercentage of all new patients with cancer with an invasive tumor in the Netherlands in 2009 and 2010, Comprehensive Cancer Centre (2011), www.cijfersoverkanker.nl.

^cPercentages of Dutch population in 2009, Statistics Netherlands (15-10-2010), <http://statline.cbs.nl/StatWeb/publication/?DM=SLNL&PA=37944&D1=a&D2=29-40&HDR=T&STB=G1&VW=T>.

first questionnaire (T1; $N = 460$), either by paper-and-pencil or on the Internet. Participants received a gift certificate of €7.50 with their first questionnaire. The main reasons for declining participation were that the person was not willing to participate in research, felt very distressed, or was not interested in spirituality. After 6 months, the participants were asked to fill out the questionnaires a second time (T2), to which 408 persons (response rate, 89%) responded. After another 6 months, the final assessment took place (T3). This third questionnaire was filled out by 383 participants (retention rate, 83%). The reasons for attrition during the study were death ($n = 19$), nonresponse ($n = 16$), no longer feeling motivated to fill out the questionnaires ($n = 22$), no longer being treated with curative intent ($n = 16$), having developed psychological problems ($n = 2$), or having become too physically ill ($n = 2$). Socio-demographic and medical characteristics of the full sample are presented in Table 1.

Questionnaires

Spirituality

The SAIL (de Jager Meezenbroek et al., 2012) was used to assess spirituality. This questionnaire was based on discussions with 30 experts from the Netherlands (psychological researchers, psychotherapists, theologians, pastoral workers, and medical doctors) about what constitutes spirituality; focus groups with six other experts and eight lay persons on the suitability, comprehensibility, ambiguity, and redundancy of the scale items; and psychometric testing among 950 students, 466 healthy persons, and 219 patients with cancer. The SAIL consists of seven distinctive subscales that represent many of the experiential and attitudinal aspects frequently considered to be part of spirituality (Chiu et al., 2004; Cohen et al., 2012; Tanyi, 2002).

The items of the subscales meaningfulness, trust, acceptance, caring for others, and connectedness with nature are rated on a 6-point scale, ranging from 1 “not at all” to 6 “to a very high degree.” The subscales transcendent experiences and spiritual activities are rated from 1 “never” to 6 “very often.” For all subscales, mean scores were calculated, with higher scores representing more spiritual involvement. The reliability (internal consistency and test-retest reliability) and validity (factor-analytic validity and convergent and divergent validity) of the scale have proven sufficient (de Jager Meezenbroek et al., 2012). In the current sample, the internal consistencies of the subscales ranged from Cronbach's $\alpha = .75$ to $.89$. The 6-month test-retest reliabilities ranged from $r = 0.64$ to 0.72 , and the 12-month test-retest reliability ranged from $r = 0.66$ to 0.87 .

The SAIL consists of the following subscales: meaningfulness (three items), which measures the person's sense of meaning and purpose in life, for example, “I experience the things I do as meaningful”; trust (four items), which measures whether the person approaches life and its events with a feeling of confidence or trust, for example, “In difficult times, I maintain my inner peace”; acceptance (four items), which measures whether the person can accept life as it unfolds, for example, “I am aware that each life has its own tragedy”; caring for others (four items), which assesses the person's need to be available to others, for example, “I try to make a meaningful contribution to society”; connectedness with nature (two items), which measures the person's experience of nature, for example, “The beauty of nature moves me”; transcendent experiences (five items), which assesses whether the person has ever had such an experience, for example, “I have had experiences in which all things seemed to be part of a greater whole”; spiritual activities (four items), which contains three items that assess the person's involvement in spiritual activities [e.g., “I talk about spiritual themes with others (themes such as the meaning in life, death or religion)"] and one item that asks whether the person feels that there is a God or higher power in his or her life that gives him or her guidance.

Well-Being

To measure well-being in a broad, but brief manner, the JiL subscale of the HDI was used (de Bruin and van Dijk, 1996). The HDI is a Dutch questionnaire designed to assess adjustment to cancer. The JiL subscale assesses well-being as the experience of positive affect (e.g., “I enjoy the things I do,” “I feel lovingly cared for by others,” and “I feel safe”) and of vitality (e.g., “I feel I do a lot during the day”). This scale previously showed reliability of $\alpha = .82$ in a sample of 460 patients with cancer. Its convergent and divergent validity were found satisfactory; the JiL scale was negatively related with the distress scales of the Profile of Moods States (POMS; Wald and Mellenbergh, 1990) and the Rotterdam Symptom Checklist (de Haes et al., 1990), but positively with the vigor subscale of the POMS. In the current sample, the internal consistency of this HDI subscale ranged from $\alpha = .91$ to $.92$ across the three assessments. The 6- and 12-month test-retest correlations were $r = 0.72, 0.79$, and 0.82 , respectively.

Fatigue

Fatigue was measured with the four-item version of the Checklist Individual Strength (CIS; Alberts et al., 1997). Norm data on this scale are available for several healthy and patient populations, including patients with cancer (Alberts et al., 1997). The shortened version is closely related to the often-used, valid, and reliable longer version of the CIS (Vercoulen et al., 1999). Participants were asked to rate whether they felt tired, were easily tired, felt well, and felt physically exhausted on a 7-point scale ranging from 1 “yes, that is true” to 7 “no, that is not true.” The item “I feel well” was reverse scored. The internal consistency of the scale was $\alpha = .89$ to $.90$ in the current sample. The 6- and 12-month test-retest correlations were $r = 0.43, 0.53$, and 0.42 , respectively.

Pain

The symptom scale on pain from the Dutch translation of the European Organization for Research and Treatment of Cancer, Quality of Life Questionnaire–C30, version 1 (Aaronson et al., 1993) was used to assess the degree of pain of the participants. Participants were asked to rate on a 4-point scale, ranging from 1 “not at all” to 4 “very much,” how much pain they had experienced during the past 2 weeks and whether this pain had limited them in their daily activities. In the current study, we used the average score of the two items (Fayers et al., 1999). Among the patients with cancer in the present study, the internal consistencies of the scale ranged from Cronbach $\alpha = .89$ to $.91$ across the three assessments. The 6- and 12-month test-retest correlations were $r = 0.51, 0.61$, and 0.55 , respectively.

FIGURE 1. Model 1, in which the subscales of the SAIL and JiL load on their respective latent factors.

FIGURE 2. Model 2, in which the subscales of the SAIL and JiL load on one latent factor.

Negative Life Events

The number of negative life events was measured only at T2 and T3. Participants were asked to indicate how often they had experienced a negative life event that had a great impact on their lives during the past 6 months, for example, illness other than cancer, a death, relationship problems, or financial problems (none, one or two times, three or four times, or five times or more, respectively).

Data Analysis

Preliminary Data Analyses

Missing value analysis on the SAIL and JiL scale indicated that up to six participants (1.1%) had not completed up to four items per scale. Little's missing completely at random test indicated that at T1 scores on the JiL and on the SAIL subscales acceptance, caring for others, and transcendent experiences were not missing completely at random. On these scales, most missing data came from one participant whose data were, therefore, removed from the data set. Most of the remaining missing data were centred on item 19 of the SAIL subscale transcendent experiences ("I have had an experience in which the nature of reality became clear to me"), which suggests that this was not missing at random. Therefore, these scores were not imputed, but the item was retained. Finally, it was assumed that the remaining missing scores were missing at random. If a participant had completed more than 75% of the items of the scale, the scores were replaced by two-way imputation (Bernaards and Sijtsma, 2000; Van Ginkel and Van der Ark, 2005).

To investigate whether attrition to the study was selective on spirituality, well-being, or physical symptoms, the participants who had dropped out of the study at T2 or T3 ($n = 61$) were compared with those who had completed all three assessments ($n = 382$) on spirituality, well-being, pain, and fatigue at T1. Independent samples t -tests indicated that the dropouts experienced significantly more fatigue (mean = 16.32, SD = 6.96 and mean = 13.30, SD = 6.74, respectively; $t[441] = -3.21$, $p = 0.001$) and pain (mean = 2.24, SD = 0.85 and mean = 1.78, SD = 0.83, respectively; $t[442] = -3.99$, $p < .001$) than the stay-ins at T1. However, the two groups did not differ on spirituality and well-being, making any bias in the results due to selective attrition less likely.

Spirituality Versus Well-Being

We have applied several different types of analyses to investigate the similarities and differences between spirituality and well-being. Robust or nonparametric tests were applied in all instances, because the scores on many of the variables did not follow a normal distribution.

First, we investigated the divergent validity of the SAIL compared with the JiL. Confirmatory factor analysis (CFA) with robust Satorra-Bentler ML estimators was used at the subscale level. Only the responses of the first measurement moment were analysed ($n = 436$). In model 1, the hypothesis is tested that spirituality and well-being are separate but correlating constructs (Fig. 1). In model 2, the hypothesis is tested that spirituality and well-being are the same construct (Fig. 2). Divergent validity is shown if a) in model 1 the covariances between the indicators and their respective constructs are higher than the covariance between the two latent constructs, and b) the covariances between the indicators and their respective constructs are higher in model 1 than in model 2. The analyses were performed with the package Lavaan (Rosseel, 2012) of R for statistical computing version 3.1.0 (R Development Core Team, 2014). The Lavaan CFA models by default fix the first indicator of a latent variable to 1, add all residual variances, and correlate all exogenous latent variables. The following criteria were used to decide whether the model fit the data: comparative fit index (CFI) greater than 0.95, and/or root mean square error of approximation (RMSEA) less than 0.08 (Quintana and Maxwell, 1999). Because of its sensitivity to sample size, the results of the chi-square test are presented but are not used to evaluate model fit.

Second, we tested whether the changes in spirituality and well-being between T1 and T2 and between T2 and T3 were related differently to external factors that are known to predict changes in mood. For this purpose, Spearman rank-order correlations were calculated between, on the one hand, the change scores of well-being and the aspects of spirituality, and, on the other hand, the number of negative life events and changes in pain and in fatigue. The correlation coefficients were computed with IBM SPSS statistics version 23 (IBM Company, 2015). To test the difference between the two correlation coefficients, the function compCorr was used. This function is available in the package maigesPack of R for statistical computing (Esteves et al., 2011).

RESULTS

Divergent Validity

Measurement Models

First, the measurement models of the JiL and SAIL were tested (Table 2). According to Quintana and Maxwell (1999), an RMSEA of 0.05 to 0.08 indicates a fair fit, whereas an RMSEA less than 0.05 indicates a close fit to the data. Kenny (2014) further suggests that a p value greater than 0.05 and a confidence interval that does not exceed the upper bound of 0.08 indicate that the model is close fitting.

According to these criteria, the measurement model of the SAIL fitted well. The measurement model of the JiL fitted poorly. Several items seemed to correlate quite strongly with each other ($r > 0.50$). On the basis of these correlations, a three-factor model seemed to be more appropriate (data not shown). Indeed, this model fit the data fairly well. The internal consistency of the three subscales was tested and

TABLE 2. Fit Indices for Measurement Models of the SAIL and JiL

	$\chi^2(df)$	p	Satorra-Bentler Correction Factor	CFI	RMSEA	90% CI	p
SAIL	643.38 (278)	<0.001	1.129	0.92	0.055	0.050–0.060	0.061
JiL 1 factor	336.67 (65)	<0.001	1.289	0.87	0.097	0.088–0.106	<0.001
JiL 3 factors	179.23 (62)	<0.001	1.276	0.94	0.065	0.056–0.075	0.006

TABLE 3. Spearman Correlation Coefficients of the Relationship Between the Aspects of the SAIL and the Aspects of the JiL at T1 (*n* = 440)

	JiL		
	Vitality	Peace	Pleasure
SAIL			
Meaningfulness	0.33***	0.47***	0.51***
Trust	0.35***	0.56***	0.52***
Acceptance	0.13**	0.38***	0.28***
Caring for others	0.14**	0.21***	0.27***
Connectedness with nature	0.08	0.18***	0.21***
Transcendent experiences	−0.08	0.08	0.05
Spiritual activities	−0.01	0.13**	0.07

p* ≤ 0.01.*p* ≤ 0.001.

was found to be good (0.79, 0.80, and 0.85, respectively). The first dimension—consisting of items 2, 3, 7, and 9—seems to reflect feelings of vitality (e.g., “I feel fit”), the second dimension—consisting of items 11, 12, and 13—seems to reflect feelings of peacefulness (e.g., “I feel calm”), whereas the third dimension—consisting of items 1, 4, 5, 6, 8, and 10—seems to reflect feelings of pleasure (e.g., “I enjoy the things I do”).

Spirituality Versus Well-Being

The correlation coefficients of the aspects of the SAIL and of the JiL are shown in Table 3. Strong associations appeared between the SAIL aspect trust and the JiL aspects peace and pleasure and between the SAIL aspect meaningfulness and the JiL aspect pleasure. No associations were found between the SAIL aspects transcendent experiences and spiritual activities and the aspects of the JiL, with the exception of the association between spiritual activities and peace, which was weak but statistically significant.

We tested two models with CFA to further explore the divergent validity of the SAIL (Figs. 1 and 2). Both models fitted the data poorly (Table 4). In model 1, most of the standardized factor loadings of the subscales on their respective factors were higher than the covariance between the two factors (Table 5). Exceptions were connectedness with nature, transcendent experiences, and spiritual activities. Nevertheless, almost all standardized factor loadings were higher in model 1 than in model 2, except for the factor loading of trust (Table 5).

Association With Pain, Fatigue, and Life Events

For this analysis, we also used the three-factor structure of the JiL. To prevent artificial inflation of the correlation coefficient of the JiL dimension vitality with fatigue, we removed item 9 (“I feel fit”) from this JiL aspect. Because of the exploratory nature of this study, no correction for multiple testing was applied.

As shown in Table 6, all variables were only weakly associated with changes in fatigue and pain, and with the occurrence of negative life events, both in the interval from T1 to T2 and in the interval from

T2 to T3. Only changes in vitality were moderately related with changes in fatigue and pain.

To examine the difference between spirituality and well-being, we examined the difference in strength of the correlation coefficients; as indicated by the asterisks in Table 6, changes in the aspects of spirituality seemed to be significantly more weakly related with changes in fatigue and pain than were changes in vitality and pleasure. Only in the interval between T2 and T3, a significant difference appeared between the relationship of changes in peace with changes in pain compared with the relationship of changes in spirituality with changes in pain. Overall, trust showed the fewest differences (5 of 18), whereas spiritual activities showed the most differences (11 of 18).

DISCUSSION

We investigated the divergent validity and the difference in the association with changes in physical symptoms and the occurrence of negative life events between a spirituality questionnaire and a well-being questionnaire. The aim of this study was to gain a further understanding of which aspects of spirituality may be considered to be truly unique for this construct and which may need to be viewed as belonging to the domain of mental health or well-being.

On the basis of our findings, we conclude that the experience of trust in one's ability to cope with difficulties in life is likely not unique to spirituality. This experience is measured in the subscale trust of the SAIL (de Jager Meezenbroek et al., 2012). This aspect correlated highly with two of the three aspects of well-being (namely, peace and pleasure) and moderately with the third aspect (namely, vitality). In the CFA, the factor loading of this aspect was higher when it loaded onto a general factor that also included well-being than when it loaded onto a spirituality factor. In addition, in 72% of the tests, the relationship of this aspect with changes in fatigue and pain, and with the occurrence of negative life events, was similar to the relationship of the well-being aspects and these factors. Other studies have also indicated that the SAIL subscale trust has unsatisfactory concurrent validity (de Jager Meezenbroek et al., 2012).

Interestingly, the results of the CFA indicated that there was a weaker association of the SAIL subscales connectedness with nature, transcendent experiences, and spiritual activities with the spirituality factor than there was between the spirituality and the well-being factor. These subscales each also explained less than 25% of the variance in the models. This finding suggests a dissimilarity between connectedness with nature, transcendent experiences, and spiritual activities from all of the other indicators in the models. In other words, these findings seem to support our initial hypothesis that the aspects meaningfulness, trust, acceptance, and caring for others bare similarity to aspects of well-being. However, the other findings in this study do suggest that meaningfulness, acceptance, and caring for others are less similar to well-being than is trust.

The meaning-making coping model of Jeserich (2014) may offer an explanation for this “clustering” of subscales of the SAIL. He suggests that religious and spiritual beliefs and experiences (such as those measured by the SAIL subscales connectedness with nature, transcendent experiences, and spiritual activities) contribute to coping with life events, because they provide a global meaning system. This global meaning system can provide a person with confidence about the meaningfulness, manageability, and comprehensibility (or a sense of coherence)

TABLE 4. Fit Indices of CFA Models Testing the Divergent Validity of the SAIL and the JiL

	χ^2 (<i>df</i>)	<i>p</i>	Satorra-Bentler Correction Factor	CFI	RMSEA	90% CI	<i>p</i>
Model 1	344.71 (34)	<0.001	1.128	0.80	0.145	0.132–0.158	<0.001
Model 2	598.05 (35)	<0.001	1.130	0.64	0.192	0.180–0.205	<0.001

TABLE 5. Parameter Estimates of the Two CFA Models

	Model 1		Model 2	
	Standardized Estimate	R ²	Standardized Estimate	R ²
Meaningfulness	0.83	0.68	0.76	0.58
Trust	0.69	0.47	0.76	0.57
Acceptance	0.65	0.42	0.59	0.35
Caring for others	0.62	0.39	0.51	0.26
Connectedness with nature	0.47	0.22	0.38	0.15
Transcendent experiences	0.42	0.17	0.31	0.09
Spiritual activities	0.45	0.20	0.33	0.11
Vitality	0.73	0.54	0.52	0.28
Peace	0.70	0.50	0.71	0.50
Pleasure	0.95	0.90	0.73	0.53
JiL ~ SAIL	0.58			

of the event and life in general. Confidence, in turn, contributes to well-being. The experiences of trust in one's ability to cope with difficulties in life seems to be related to this sense of confidence, whereas the experience of meaning in life, acceptance of the negative aspects of life,

and a need to be available to others may be intermediate variables related to a sense of coherence. In other words, connectedness with nature, transcendent experience, and spiritual activities may support a sense of meaningfulness, acceptance, and caring for others, which then lead to a sense of trust.

The results from our study partially confirm the finding by Migdal and MacDonald (2013) among undergraduate students that the subscale EWB of the ESI (MacDonald, 1997, 2000a, 2000b) seems to belong to the domain of well-being, instead of spirituality. This ESI subscale measures a) a sense of meaning and purpose for existence and b) a sense of competence and confidence in one's ability to cope (MacDonald, 2000a, 2000b). Within our study, the latter is reflected within the SAIL subscale trust, whereas the SAIL subscale meaningfulness mirrors the EWB experiences of meaning and purpose in life. As shown, these two subscales are differently related to well-being, which also suggests that the concept of EWB contains components that are related but belong to different domains of human experience.

Several limitations to the current study need to be addressed. First, we have used only one measure of spirituality and of well-being to investigate the conceptual difference between the two, so the results may be specific to these operationalizations of the concepts. On the other hand, the SAIL was based on extensive discussions between experts on spirituality in the Netherlands and the subscales correspond to what are regarded important aspects of spirituality by authors in the field (Chiu et al., 2004; Cohen et al., 2012; Tanyi, 2002). Our measure of well-being also covers a range of aspects that are considered to be important about the concept of well-being. Nevertheless, future studies

TABLE 6. Test of the Difference Between the Spearman Rank-Order Correlations of the Change in Spirituality and the Change in Well-Being With the Change in Fatigue and Pain, and the Number of Negative Life Events

	Vitality			Peace			Pleasure		
	Fatigue	Pain	Negative Life Events	Fatigue	Pain	Negative Life Events	Fatigue	Pain	Negative Life Events
Well-being	-0.398	-0.232	0.078	-0.110	-0.048	-0.104	-0.178	-0.170	-0.070
Meaningfulness	-0.024***	0.060***	0.023 ^a	-0.024 ^a	0.060 ^a	0.023 ^a	-0.024*	0.060***	0.023 ^a
Trust	-0.100***	0.020***	-0.087*	-0.100 ^a	0.020 ^a	-0.087 ^a	-0.100 ^a	0.020**	-0.087 ^a
Acceptance	-0.044***	0.047***	-0.075*	-0.044 ^a	0.047 ^a	-0.075 ^a	-0.044 ^a	0.047**	-0.075 ^a
							(<i>p</i> = 0.059)		
Caring for others	0.007***	-0.060**	-0.033 ^a	0.007 ^a	-0.060 ^a	-0.033 ^a	0.007**	-0.060 ^a	-0.033 ^a
Connectedness with nature	-0.042***	0.096***	-0.006 ^a	-0.042 ^a	0.096*	-0.006 ^a	-0.042*	0.096***	-0.006 ^a
							(<i>p</i> = 0.055)		
Transcendent experiences	0.103***	0.085***	-0.014 ^a	0.103**	0.085 ^a	-0.014 ^a	0.103***	0.085***	-0.014 ^a
					(<i>p</i> = 0.064)				
Spiritual activities	0.051***	0.028***	-0.093*	0.051*	0.028 ^a	-0.093 ^a	0.051***	0.028**	-0.093 ^a
T2-T3 (<i>n</i> = 363)									
Well-being	-0.399	-0.174	-0.110	-0.169	-0.178	-0.068	-0.231	-0.087	-0.028
Meaningfulness	-0.068***	0.061***	0.014 ^a	-0.068 ^a	0.061***	0.014 ^a	-0.068*	0.061*	0.014 ^a
Trust	-0.168***	-0.092 ^a	-0.061 ^a	-0.168 ^a	-0.092 ^a	-0.061 ^a	-0.168 ^a	-0.092 ^a	-0.061 ^a
Acceptance	-0.081***	0.009*	0.011 ^a	0.081 ^a	0.009*	0.011 ^a	0.081*	0.009 ^a	0.011 ^a
Caring for others	-0.036***	-0.003*	0.114**	-0.036 ^a	-0.003*	0.114**	-0.036**	-0.003 ^a	0.114 ^a
									(<i>p</i> = 0.056)
Connectedness with nature	-0.061***	0.061***	0.012 ^a	-0.061 ^a	0.061***	0.012 ^a	-0.061*	0.061*	0.012 ^a
Transcendent experiences	0.016***	0.026**	-0.034 ^a	0.016**	0.026**	-0.034 ^a	0.016***	0.026 ^a	-0.034 ^a
Spiritual activities	0.025***	0.035**	-0.005 ^a	0.025**	0.035**	-0.005 ^a	0.025***	0.035 ^a	-0.005 ^a

^aNonsignificant, **p* ≤ 0.05, ***p* ≤ 0.01, ****p* ≤ 0.001 for the test of the difference in strength between the correlation of changes in fatigue and pain, and the occurrence of negative life events with the aspects of well-being compared with the correlation of changes in fatigue and pain, and the occurrence of negative life events with the aspects of spirituality.

with the primary goal to investigate the conceptual difference between spirituality and well-being should utilize several measures of spirituality and of well-being to understand more fully how these broad concepts relate to each other and where the domain of the one begins and that of the other ends.

Now that we have gained a further understanding of which aspects of spirituality scales might be unique to this construct, we can begin to take steps toward investigating the true nature of the relationship between spirituality and mental health: Are they part of the same domain or are they causally related? Comparative studies on psychological interventions with and without a spiritual connotation or studies on the experiences of novices within a spiritual tradition may provide some clues toward answering these questions. For those researchers who want to undertake such efforts, we paraphrase the advice by (MacDonald, 2011): a) utilize empirically validated, multidimensional models and measures wherever possible; b) make use of existing theories and measures, so the area of study is both legitimized and developed further; c) use multiple, complementary methods, such as quantitative self-report measures, the assessment of observable and quantifiable behavior, and qualitative methods; and d) take into account both the positive and the negative influences of spirituality on human functioning.

CONCLUSIONS

It seems that spirituality questionnaires should not include an aspect of trust or a sense that one is able to cope with difficulties of life, because this is likely not unique to spirituality. Other aspects of spirituality seem to be distinct from well-being, such as a sense of meaning and purpose in life, acceptance, caring for others, connectedness with nature, transcendent experiences, and spiritual activities. The results from the present study speak for the construct validity of the SAIL and enable researchers to construct spirituality scales that do not show overlap with mental health. Such scales will allow them to investigate the causal relationship between spirituality and well-being without arriving at meaningless and tautological conclusions.

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DISCLOSURE

The authors declare no conflict of interest.

REFERENCES

- Aaronson NK, Ahmedzai S, Bergman B, Bullinger M, Cull A, Duez NJ, Filiberti A, Flechter H, Fleishman SB, de Haes JC, Kaasa S, Klee M, Osoba D, Razavi D, Rofo PB, Schraub S, Sneeuw K, Sullivan M, Takeda F (1993) The European organization for research and treatment of cancer QLQ-C30: A quality-of-life instrument for use in international clinical trials in oncology. *J Natl Cancer Inst*. 85: 365–376.
- Alberts M, Smets EMA, Vercoulen JHMM, Garssen B, Bleijenberg G (1997) Verkorte vermoeidheidsvragenlijst: Een praktisch hulpmiddel bij het scoren van vermoeidheid [Shortened fatigue scale: A practical tool for the scoring of fatigue]. *Nederlands Tijdschrift Voor Geneeskunde*. 141:1526–1530.
- Arndt V, Stegmaier C, Ziegler H, Brenner H (2006) A population-based study of the impact of specific symptoms on quality of life in women with breast cancer 1 year after diagnosis. *Cancer*. 107:2496–2503.
- Berghuijs J, Pieper J, Bakker C (2013) Conceptions of spirituality among the Dutch population. *Arch Psychol Relig*. 35:369–398.
- Bernaards CA, Sijtsma K (2000) Influence of imputation and EM methods on factor analysis when item nonresponse in questionnaire data is nonignorable. *Multivariate Behav Res*. 35:321–364.
- Chiu L, Emblen JD, Van Hofwegen L, Sawatzky R, Meyerhoff H (2004) An integrative review of the concept of spirituality in the health sciences. *West J Nurs Res*. 26: 405–428.
- Clough-Gorr KM, Ganz PA, Silliman RA (2007) Older breast cancer survivors: Factors associated with change in emotional well-being. *J Clin Oncol*. 25:1334–1340.
- Cohen MZ, Holley LM, Wengel SP, Rabbi Mendel Katzman (2012) A platform for nursing research on spirituality and religiosity: Definitions and measures. *West J Nurs Res*. 34:795–817.
- de Bruin EJ, van Dijk M (1996) *HDI—Health and Disease Inventories, een meetinstrument voor aanpassing aan kanker. Handleiding [HDI—Health and Disease Inventories, a measurement instrument for adjustment to cancer. Manual]*. Lisse: Swets & Zeitlinger.
- de Haes JC, van Knippenberg FC, Neijt JP (1990) Measuring psychological and physical distress in cancer patients: Structure and application of the Rotterdam Symptom Checklist. *Br J Cancer*. 62:1034–1038.
- de Jager Meezenbroek E, Garssen B, Van den Berg M, Tuytel G, Van Dierendonck D, Visser A, Schaefeli WB (2012) Measuring spirituality as a universal human experience: Development of the Spiritual Attitude and Involvement List (SAIL). *J Psychosoc Oncol*. 30:141–167.
- den Ouden BL, De Vries J, Van der Steeg AF, Roukema JA, Van Heck GL (2009) Determinants of overall quality of life in women over the first year after surgery for early stage breast cancer. *Qual Life Res*. 18:1321–1329.
- Edmondson D, Park CL, Blank TO, Fenster JR, Mills MA (2008) Deconstructing spiritual well-being: Existential well-being and HRQOL in cancer survivors. *Psychooncology*. 17:161–169.
- Esteves GH, Hirata Jr wcfR, Neves EJ, Cristo EB, Simoes AC, Fahham L (2011) maigesPack: Functions to handle cDNA microarray data, including several methods of data analysis. R package version 1.28.1. Available at: <http://www.maiges.org/en/software/>. Accessed June 6, 2014.
- Fayers P, Aaronson N, Bjordal K (1999) *EORTC QLQ-C30 scoring manual* (3rd ed, Vol. 30). Brussels: European Organisation for Research and Treatment of Cancer.
- Garssen B, Visser A (2016) Spiritual wellbeing predicting depression: Is it relevant? *J Behav Med*. 39:369.
- Garssen B, Visser A, de Jager Meezenbroek E (2016) Examining whether spirituality predicts subjective well-being: How to avoid tautology. *Psychol Relig Spiritual*. 8: 141–148.
- Hvidt NC, Ausker NH, La Cour P (2012) Six understandings of the word “spirituality” in a secular country. *Arch Psychol Relig*. 34:63–81.
- Jeserich F (2014) The coherence hypothesis: Critical reconsideration, reception history and development of a theoretical model. *Arch Psychol Relig*. 36:1–51.
- Kapuscinski AN, Masters KS (2010) The current status of measures of spirituality: A critical review of scale development. *Psychol Relig Spiritual*. 2:191–205.
- Kenny DA (2014) Measuring Model Fit. Available at: <http://davidakenny.net/cm/fit.htm>. Accessed July 30, 2015.
- Koenig HG (2008) Concerns about measuring “spirituality” in research. *J Nerv Ment Dis*. 196:349–355.
- Laubmeier KK, Zakowski SG (2004) The role of objective versus perceived life threat in the psychological adjustment to cancer. *Psychol Health*. 19:425–437.
- Ledbetter MF, Smith LA, Fischer JD, Vosler-Hunter WL, Chaddock T (1991) An evaluation of the construct validity of the Spiritual Well-Being Scale: A confirmatory factor analytic approach. *J Psychol Theol*. 19:94–102.
- MacDonald DA (1997) *The development of a comprehensive factor analytically derived measure of spirituality and its relationship to psychological functioning*. Windsor, Canada: University of Windsor.
- Macdonald DA (2000a) The Expressions of Spirituality Inventory: Test development, validation and scoring information. Available at: <https://ckannet-storage.commondatastorage.googleapis.com/2015-01-04T21:42:45.640Z/esimanual.pdf>. Accessed July 8, 2015.

- MacDonald DA (2000b) Spirituality: Description, measurement, and relation to the five factor model of personality. *J Pers*. 68:153–197.
- MacDonald DA (2011) Studying spirituality scientifically: Reflections, considerations, recommendations. *J Manage Spiritual Relig*. 8:195–210.
- Mattis JS (2000) African American women's definitions of spirituality and religiosity. *J Black Psychol*. 26:101–122.
- Mazzotti E, Mazzuca F, Sebastiani C, Scoppola A, Marchetti P (2011) Predictors of existential and religious well-being among cancer patients. *Support Care Cancer*. 19:1931–1937.
- Migdal L, MacDonald DA (2013) Clarifying the relationship between spirituality and well-being. *J Nerv Ment Dis*. 201:274–280.
- National Interfaith Coalition on Aging (1975) *Spiritual well-being: A definition*. Athens, GA: National Interfaith Coalition on Aging.
- Paloutzian RF, Ellison CW (1982) Loneliness, spiritual well-being and the quality of life. In Peplau LA, Perlman D (Eds), *Loneliness: A source book of current theory, research and therapy* (pp 224–237). New York: John Wiley.
- Quintana SM, Maxwell SE (1999) Implications of recent developments in Structural Equation Modeling for counseling psychology. *Couns Psychol*. 27:485–527.
- R Developmental Core Team (2014) *R: A language and environment for statistical computing*. Vienna, Austria: R Foundation for Statistical Computing.
- Rosseel Y (2012) lavaan: An R Package for Structural Equation Modeling. *J Stat Softw*. 48:1–36.
- Ryff CD (1989) Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *J Pers Soc Psychol*. 57:1069–1081.
- Statistics Netherlands (2010) Kerkelijke gezindte en kerkbezoek; vanaf 1849; 18 jaar of ouder [Church affiliation and attendance; from 1849; 18 years or older]. Available at: <http://statline.cbs.nl/StatWeb/publication/?DM=SLNL&PA=37944&D1=a&D2=29-40&HDR=T&STB=G1&VW=T>. Accessed October 15, 2010.
- Tanyi RA (2002) Towards clarification of the meaning of spirituality. *J Adv Nurs*. 39: 500–509.
- Van Ginkel JR, Van der Ark LA (2005) SPSS syntax for missing value imputation in test and questionnaire data. *Appl Psychol Meas*. 29:152–153.
- Vercoulen JHM, Alberts M, Bleijenberg G (1999) De Checklist Individuele Spankracht (CIS) [The Checklist Individual Strength (CIS)]. *Gedragstherapie*. 32:131–136.
- Wald FD, Mellenbergh GJ (1990) De verkorte versie van de Nederlandse vertaling van de Profile of Mood States (POMS) [The shortened version of the Dutch translation of the Profile of Mood States (POMS)]. *Nederlands Tijdschrift Voor de Psychologie En Haar Grensgebieden*. 45:86–90.
- Wooten AC, Burney S, Foroudi F, Frydenberg M, Coleman G, Ng KT (2007) Psychological adjustment of survivors of localised prostate cancer: Investigating the role of dyadic adjustment, cognitive appraisal and coping style. *Psychooncology*. 16:994–1002.