SYSTEMATIC REVIEW OF SPIRITUAL WELL-BEING SCALES

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Abstract

Het concept van welbevinden is door de jaren heen een belangrijk aandachtspunt geweest in de wetenschappelijke wereld waardoor verschillende instrumenten zijn ontwikkeld die hun waarde hebben bewezen in termen van betrouwbaarheid en validiteit. Het welbevinden wordt in de wetenschappelijke literatuur vaak omschreven als een combinatie van het emotioneel, psychologisch en sociaal welbevinden. Echter, naast deze aspecten van welbevinden duiden verschillende onderzoeken op het bewijs van spiritualiteit als een aspect van het welbevinden. Dus om het welbevinden te kunnen verhogen, is het belangrijk om dit begrip zo compleet mogelijk te meten. Om die reden zijn in dit onderzoek de meest gebruikte spiritueel welbevinden instrumenten op een systematische wijze geïdentificeerd en beoordeeld op hun psychometrische kwaliteiten. De twee meest voorkomende instrumenten zijn uiteindelijk beoordeeld; de Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being Scale (FACIT-Sp) en de Spiritual Well-Being Scale (SWBS). Voor elk instrument is een kernartikel geselecteerd aan de hand waarvan de methodologie is beoordeeld om conclusies te kunnen trekken met betrekking tot de psychometrische kwaliteiten in termen van inhoudsvaliditeit en hypotheses toetsen (onderdeel van constructvaliditeit). Het is beoordeeld aan de hand van de COSMIN checklist en het ‘slechtste score telt’ principe. De uitkomst is een *slechte* beoordeling van de methodologie van de kernartikelen. Dit houdt in dat op basis van de kernartikelen de psychometrische kwaliteiten van de instrumenten onvoldoende zijn geëvalueerd en dat er (een gedeelte van) informatie mist over de manier waarop de inhouds- en constructvaliditeit in de betreffende artikelen tot stand is gekomen. Ook kwam in dit onderzoek naar voren dat eerder onderzoek op het gebied van spiritueel welbevinden meestal plaatsvond in de klinische context. Tot slot duiden de resultaten van dit onderzoek erop dat alternatieven voor de COSMIN checklist en ‘slechtste score telt’ principe wellicht kunnen bijdragen aan een minder strenge en beter passende conclusie met betrekking tot de manier waarop de kwaliteit van de methodologie wordt geëvalueerd. Voor toekomstig onderzoek kunnen mogelijk ook de spiritueel welbevinden instrumenten die minder vaak in de literatuur worden genoemd belangrijke inzichten verschaffen in de bruikbaarheid van alternatieve spiritueel welbevinden instrumenten en verdienen om deze redenen meer aandacht.

Kernwoorden: welbevinden, spiritualiteit, beoordeling, psychometrisch, instrument

Abstract

Throughout the years the concept of well-being has been an important focus in the scientific world and various instruments were developed that measured this concept and proved their worth in terms of reliability and validity. In scientific literature well-being is often described as a combination of the emotional, psychological and social well-being. However, beside these aspects of well-being various studies indicate that the aspect of spirituality is equally important in the assessment of well-being. Therefore, in order to improve well-being, we should be able to accurately measure this construct, including aspect of spirituality. In this study the most frequently used spiritual well-being scales were systematically identified and reviewed on their psychometric properties. The two most frequently used scales were selected for review; the Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being Scale (FACIT-Sp) and the Spiritual Well-Being Scale (SWBS). Subsequently, for each scale key articles were selected in order to review the methodology of these articles and consequently draw conclusions regarding their psychometric properties in terms of content validity and hypotheses testing (or construct validity). The methodology of the key articles was reviewed using the COSMIN checklist and "worst score counts" principle. The results implied a *poor* rating of the methodology, which means that on the basis of the key articles the psychometric qualities of the instruments have not been sufficiently evaluated. This means that a (part of) information is missing about the way in which the content and construct validity has been developed in the key articles. This present study also contributed to the knowledge that earlier research in the field of spiritual well-being usually took place in the clinical context. Finally, the results of this study indicate that alternatives for the COSMIN checklist and "worst score counts" principle may contribute to a more appropriate conclusion regarding the review of the methodology. For future research it may also be useful to pay more attention to the less frequently used spiritual well-being scales, which may provide important insights in the usefulness of the less frequently used scales.

Keywords: well-being, spirituality, review, psychometric, scale

SYSTEMATIC REVIEW OF SPIRITUAL WELL-BEING SCALES

Throughout history a lot of effort has been made to study what entails the 'good life' and its related constructs such as happiness, quality of life, good health, well-being and so on. These constructs make their importance notable not only on individual level but on the national level as well through economy and politics (Dutt & Radcliff, 2009). Since the first philosophers until the present time, the search for good life forms an important aspect of people's lives. It is what motivates people to fulfill their needs, and influences a great deal of people's behavior (Van Dierendonck, 2012). A well-known example was the American Dream, which was characterized by factors such as economic success, marriage and home ownership (Bufford, Ellison & Paloutzian, 1991; Fuchsman, 2016), which emphasizes the materialistic motive, while others are motivated by other than materialistic needs (Kasser, 2016).

One way to describe good life is by looking at the positive mental health. From this point of view positive mental health can be seen as a combination of the emotional, psychological and social aspects of well-being, which reflect the quality of life (Bieda, Hirschfeld, Schonfeld, Brailovskaia, Zhang, & Margraf, 2017). The psychological and social well-being can be perceived as an optimal functioning and meaning in both personal life (psychological aspect) and social life (social aspect). The emotional well-being refers to the presence of positive affect, absence of negative affect and satisfaction with life (Keyes, 2002; Stratham & Chase, 2010; Seligman, 2011; Lamers, 2012). Various studies indicate the importance of improving well-being among the citizens. Promoting well-being can lead to a positive effect on the employment and productivity of citizens, confidence and motivation towards education, can lead to positive health outcomes as well as environmental behaviors (Kim, Kee, & Lee, 2015; Maccagnan, Wren-Lewis, Brown, & Taylor, 2018). In order to improve well-being, it is necessary to be able to accurately measure this construct (Tannenbaum, Lexchin, Tamblyn, & Romans, 2009). Various instruments proved their suitability in this area, such as the Mental Health Continuum (Short Form) (MHC-SF) and the Positive Mental Health Scale (PMH-scale) (Lamers, Westerhof, Bohlmeijer, Ten Klooster, & Keyes, 2011; Lukat, Margraf, Lutz, Van der Veld, & Becker, 2016; Bieda et al., 2017). Both MHC-SF and PMH-scale proved to be reliable and valid instruments to measure the components of well-being in the general population, such as the emotional,

psychological and social well-being (Lamers et al., 2011; Guo, Tomson, Guo, Li, Keller & Soderqvist, 2016).

Spiritual well-being

Beside the emotional, psychological and social aspect, various studies indicate a consistent evidence of spirituality as another, equally important, aspect of well-being (Bufford et al., 1991; Panzini, Mosqueiro, Zimpel, Bandeira, Rocha, & Fleck, 2017). Bufford, Paloutzian and Ellison (1991) for instance describe the modern counterpart to the good life as a combination of material as well as psychological and spiritual well-being. The scientific literature, however, is barely focused on the spiritual aspect in the measurement of good life, while spirituality is often emphasized as an important factor in the quality of life (QoL) and there is a growing evidence that spirituality is equally important in the assessment of a person's well-being (Bufford et al., 1991; Moberg, 2008; Canada, Murphy, Fitchett, Peterman & Schover, 2008; Whitford & Olver, 2012; Soleimani, Sharif, Allen, Yaghoobzadeh, Nia, & Gorgulu, 2016; Panzini et al., 2017; Peres, Kamei, Tobo & Lucchetti, 2017). The concept of spirituality however, proves difficult to define. Various studies pay attention to the wide-ranging definitions and perceptions of this concept and it is not uncommon that spirituality and religiousness are often mixed up.

The concept of spirituality pertains a faith and a meaning component. The faith component relates to the belief in a higher, transcendent power, such as a "God", or participation in a specific organized religion. It is related to the connectedness with this higher, transcendent power. The meaning component on the other hand has a more existential focus and is related to the idea that each individual has a unique role and purpose in life. Thus, the faith component is often associated with religiousness, while the meaning component can be seen as a universal concept, whether you are religious or not. While spirituality and religion overlap and are easily confused, the concept of spirituality usually refers to the subjective, personal experience of transcendence (Moberg, 2008; Agli, Bailly & Ferrand, 2015). Therefore, based on various studies, recurring components of spirituality can be integrated in the definition of this concept. Thus spirituality can be defined as an individual's process of understanding the meaning and purpose of life that transcends the self and the feelings that derive from that process or the satisfaction one gains from the belief in a superior power, such as a "God" (Moberg, 2008;

Senreich, 2013; Agli et al., 2015; Soleimani et al., 2016).

Results of various studies indicate the importance of spirituality in the experience of a positive mental health. Spiritual coping, the use of spirituality to cope with stressful life events, plays an important role in how people deal with stressful events and the extent to which these events influence the quality of life. In the geriatric care for example and in rehabilitation of older clients, many sources show evidence of the positive effect of the integration of spirituality in health care. The positive effect of spirituality is also found in the treatment of (terminally) ill patients; patients who were spiritually minded experienced higher levels of social support, improved mood and a higher sense of peace (Moberg, 2008; Agli et al., 2015; Wang, Chow & Chan, 2017). Concerning the instruments that measure this spiritual component, there is a number of spiritual well-being scales, like the Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being Scale (FACIT-Sp), Spiritual Well-Being Questionnaire (SWBQ) or the Spiritual Well-Being Scale (SWBS), which over the years have been often put to practice. Although the spirituality dimension, as described, seems to play an important role in well-being, research in the field of well-being is often focused on the psychological, emotional and social aspect. As a result, the purpose of this study was to shed more light on the spirituality aspect in the context of well-being. Various studies explicitly mention a lack of insight in the spirituality aspect of well-being, while the religiousness aspect has been studied more extensively in this perspective (Moberg, 2008; Agli et al., 2015). This study focuses therefore on the existential aspect of spirituality, thereby leaving out the religiousness aspect.

Goal of this study

The focus of this study was to systematically review spirituality scales through analysis of studies regarding these scales. Therefore the present study was designed to investigate the most important spiritual well-being scales on their psychometric properties. Thereby the focus lies on 1) the content validity; the extent to which the scales measure all the representative facets of spiritual well-being and 2) construct validity (or hypotheses testing); the extent and the direction to which spiritual well-being relates to other constructs.

Method

Data source

Literature was collected via PsycINFO and Web of Science by researcher 1 (Julia Pellengahr) and researcher 2 (Artjom Lalajants). The choice to use these databases has to do with the fact that PsycINFO as well as Web of Science has a broad collection of scientific research and scholarly literature and is therefore suited for exploring and locating behavioral and social scientific literature. According to the American Psychological Association (APA) the content of these databases is significant to the field of psychology and related disciplines, which enables to retrieve various relevant material (http://www.apa.org/). Considering the research question, a search string was developed in order to identify the relevant articles in the two databases. Therefore key words were determined in order to compose the search string.

Search string

The search terms SPIRITUAL and WELL-BEING were combined by quotation marks in order to identify articles that focused solely on well-being in relation to spirituality. Because well-being is sometimes spelled in different ways, it was decided to adapt it to the search string by integrating 'SPIRITUAL WELL-BEING' as well as 'SPIRITUAL WELLBEING' and 'SPIRITUAL WELL BEING' in the search string. Consequently, synonyms were determined for 'SCALE'. Through this process the terms QUESTIONNAIRE, ASSESSMENT, MEASURE, INVENTORY and INSTRUMENT were generated. In order to identify articles regarding the psychometric qualities of 'spiritual well-being scales', the keywords PSYCHOMETRIC and 'PSYCHOMETRIC PROPERTIES' were added. This led to the following search string for spirituality scales: 'SPIRITUAL WELL-BEING' OR 'SPIRITUAL WELLBEING' OR 'SPIRITUAL WELL BEING' AND SCALE OR QUESTIONNAIRE OR ASSESSMENT OR MEASURE OR INVENTORY OR INSTRUMENT, and regarding the psychometric qualities: PSYCHOMETRIC OR 'PSYCHOMETRIC PROPERTIES'.

The next step was to refine the search. Again, with the scope of the study in mind the first step was to find an appropriate time span of the publications; ten years ranging from 2008 to

2018, with academic journals as the source type and in English language. Summarized, the following inclusion criteria were used in the search.

-Integration of scales that explicitly measure SWB;
-At least one qualitative scale was used;
-No literature reviews;
-Also SWB-scales that are part of an instrument with a broader scope;
-Articles written in English, used SWB-scales in any language.

Subsequently the search string yielded a set of articles in both databases. Both datasets were downloaded from the databases and integrated into a single dataset in data managing program Mendeley. In Mendeley the articles were then alphabetically organized.

Exclusion Criteria

Excluded from the dataset were duplicate articles. First the duplicates were auto searched using the 'check for duplicates' tool in Mendeley. Subsequently the set of remaining articles was hand searched and the remaining duplicates were deleted from the set. Also articles that deviated from the inclusion criteria were excluded from the dataset. The next step was to screen the articles in the dataset to identify spiritual well-being scales.

Screening

Screening of the articles was carried out using the systematic sampling method. First was decided to split the dataset so that each researcher was responsible for screening half of the dataset, approximately 500 articles. Then each researcher screened sets of 50 articles in alphabetical order, skipping 50 articles (1-50, 101-150, 201-250 and so forth). The screening consisted of analyzing the abstract of each article and identifying which spiritual well-being scales were used. Each identified scale was recorded in a table so that every scale and its frequency was outlined in the table. In order for a scale to be included in the table it had to be clear from the abstract that a certain scale was used to measure spirituality. The first 50 articles were screened by both researchers in order to get an impression of the inter-rater reliability. The inter-rater reliability coefficient Kappa for these 50 articles was .897, which can be regarded as a

near perfect inter-rater agreement (McHugh, 2012). Eventually, when the relevant articles were screened and recorded in the table, a top five was created based on the frequency of the scales. From the top five the two most frequently named scales were chosen for review. This choice was made because of pragmatic reasons.

Assessment of the psychometric quality of the scales

For the spiritual well-being scales a key article was identified in order to assess the psychometric quality of the scales. The key article was meant to provide substantial information on the development and validation of the scales. The next step involved the assessment of the studies using the criteria of the COSMIN checklist for content validity, as presented in Table 1 (Terwee et al., 2012). The checklist involves different criteria to assess the content validity of the studies. The criteria are about the relevance and comprehensiveness of the design, consisting of five criteria in total. In order to assess the construct validity of the scales, the COSMIN checklist for hypotheses testing was deployed. The checklist involves 10 criteria to measure the degree to which the measurement properties of the instrument are consistent with the hypotheses. The criteria for assessing construct validity are outlined in Table 2. The assessment of the criteria involved a four-point scale: *poor, fair, good, excellent,* by which a criterion was assessed (Mokking et al, 2012). In order to determine the overall quality of a study "the worst score counts" principle was followed, meaning that the overall score (or quality) of the study depends on the lowest scored criterion (Mokking et al., 2012). Important to note is that through this review study the methodology of a study is being assessed, not the instrument itself. In case an aspect of the study has been rated as *poor*, it means that it cannot be used to evaluate the quality of the instrument.

Table 1

COSMIN criteria for content validity

1. Was there an assessment of whether all items refer to relevant aspects of the construct to be measured?

2. Was there an assessment of whether all items are relevant for the study population? (e.g. age, gender, disease characteristics, country, setting)

3. Was there an assessment of whether all items are relevant for the purpose of the measurement instrument? (discriminative, evaluative, and/or predictive)

4. Was there an assessment of whether all items together comprehensively reflect the construct to be measured?

5. Were there any important flaws in the design or methods of the study?

Table 2

COSMIN criteria for hypotheses testing (construct validity)

1. Was the percentage of missing items given?

2. Was there a description of how the missing items were handled?

3. Was the sample size included in the analysis?

4. Were hypotheses regarding correlations or mean differences formulated a priori (i.e. before data collection)?

5. Was the expected direction of correlations or mean differences included in the hypotheses?

6. Was the expected absolute or relative magnitude of correlations or mean differences included in the hypotheses?

7. For convergent validity: Was an adequate description provided of the comparator instrument(s)?

8. For convergent validity: Were the measurement properties of the comparator instrument(s) adequately described?

9. Were there any important flaws in the design or methods of the study?

10. Were design and statistical methods adequate for the hypotheses to be tested?

Results

Eventually, 1073 articles on spirituality were identified using the search string; 514 in PsycINFO and 559 in Web of Science. Then the articles were screened for duplicates, first automated, then manually, which led to the final dataset of 960 articles of which 500 were screened. After the screening the 500 articles were reduced to 459 as some articles did not meet the inclusion criteria. All instruments covering SWB were registered and the frequency was recorded. Accordingly, the two most frequent instruments were chosen for review; FACIT-Sp and SWBS. This step by step process is shown in Figure 1. In order to review the methodology concerning the development of the scales, key articles were searched for each scale. These key articles were selected on the basis of the year of publication and the extent of the elaboration of the methodology. Preferably the key article would provide a detailed description of the scale development in order for the article to be reviewed appropriately. Therefore, the key article of Peterman, Fitchett, Brady, Pharm and Cell (2002) was used to review the methodology of the FACIT-Sp and a key article of Bufford et al. (1991) was used to review the SWBS. Additionally, in the review of the SWBS an article of Genia (2001) was used to complement for the limited information about the methodology in Bufford et al. (1991). A summary of the review of the psychometric properties as described in the key articles can be found in Appendix A.

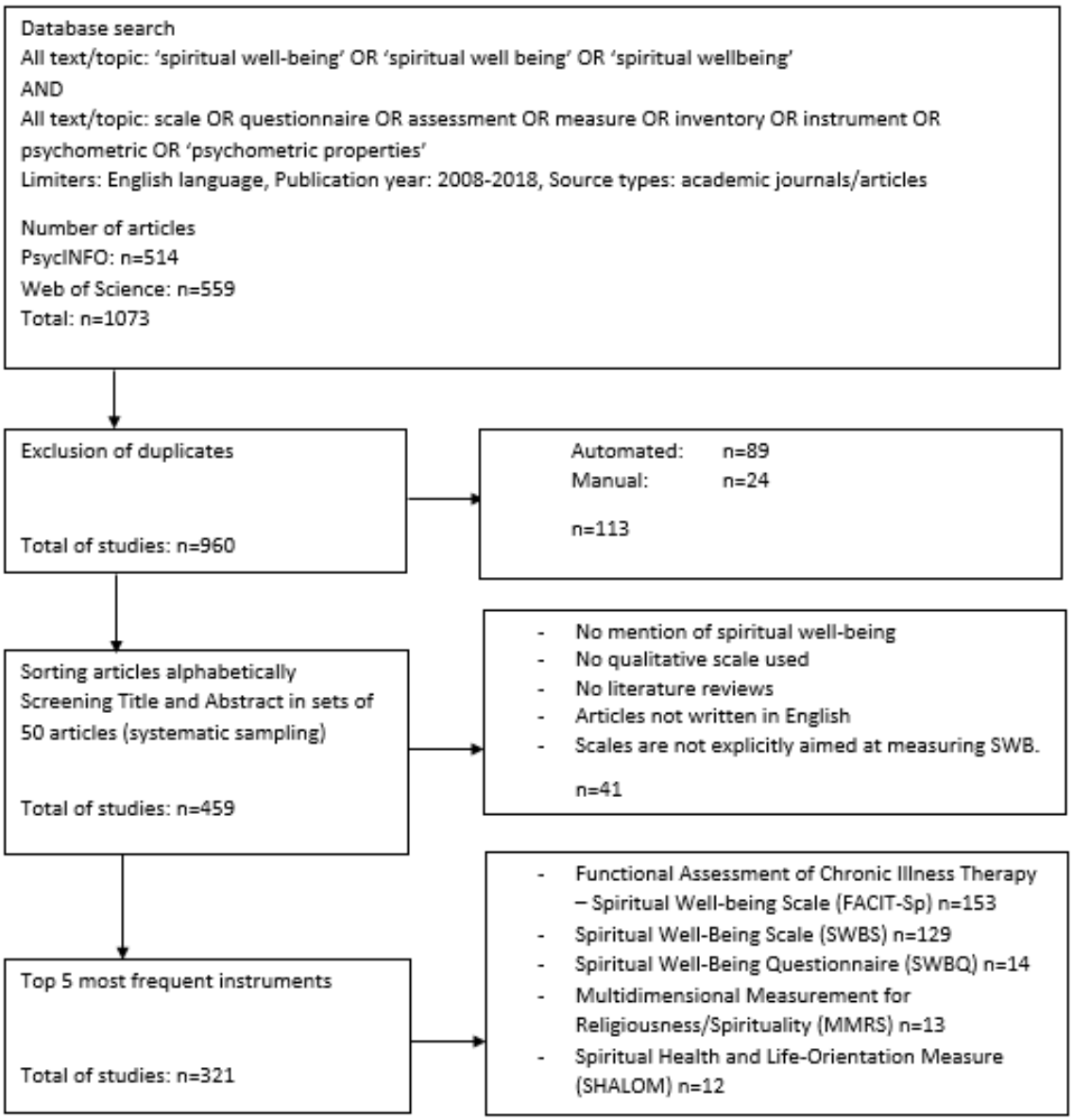

Figure 1. Flowchart of the process of searching and identifying the spiritual well-being scales.

Functional Assessment of Chronic Illness Therapy – Spiritual Well-being Scale (FACIT-Sp)

The FACIT-Sp was developed in the 90's with the intention to provide a holistic measure of spirituality, applicable to people with chronic illnesses. The theory behind the scale development is based on earlier studies on the role of spirituality and is rooted in the study of Mickley, Soeken and Bechler (1992) and Larson, Swyers and McCullough (1998). In their study,

Peterman et al. (2002) describe spirituality as a personal search for meaning and purpose in life, connection with a transcendent dimension of existence, and the experiences and feelings associated with that search and that connection. The development of the FACIT-Sp involved two studies; one to establish the reliability and validity of the scale and one to further validate the scale by further examining the relationship between FACIT-Sp and other existing measures of spirituality.

The participants in study 1, consisting of 1617 (ex) patients and several hospital chaplains, were approached through treatment visits and hospitalizations (i.e. clinic as well as policlinic patients); participants had to be over the age of 18 and had current or past diagnoses of cancer and/or HIV infection/AIDS, except for the hospital chaplains. Participants were informed about the goal of the study. Subsequently participants completed the questionnaires (in either English or Spanish). Eventually, items were created on the basis of the interviews. Thereby participants were asked how they described aspects of spirituality and faith that contributes to the quality of life. The responses emphasized a sense of meaning in life, harmony, peacefulness, and a strength and comfort from one's faith. Based on these components, the 12-items of the FACIT-Sp were developed. From each participant the demographic characteristics were recorded. The responses to the items on the FACIT-Sp are ordinal, on a 5-point Likert Scale, ranging from 0 = 'not at all' to 4 = 'very much' (Peterman et al., 2002). Study 2 involved 131 participants from a larger study which investigated fatigue and health related quality of life among patients who started chemotherapy.

Peterman et al. (2002) found the results on the FACIT-Sp to be a good predictor of the general quality of life in oncology patients. Regression analysis showed the meaning/peace scale being a robust indicator of health related quality of life (HRQOL) (r = 0.515). SWB was also found to correlate positively with a fighting spirit for example (r = 0.46) and negatively with hopelessness (r = -0.55). It is not mentioned in the study, however, by which scales fighting spirit and hopelessness are measured (Peterman et al., 2002).

Evaluation. Regarding the content validity, Peterman et al. (2002) describe in their study the construct of spirituality as consisting of the dimensions 1) personal search for meaning and purpose in life, 2) connection with a transcendent dimension of existence, and 3) experiences and feelings associated with that search and that connection. Subsequently, the items used in FACIT-

Sp, that measure spirituality, the Meaning/Peace subscale, do refer to these dimensions. An example of an item measuring the dimension 'personal search for meaning and purpose in life' is 'I feel a sense of purpose in life' and an example of an item measuring the dimension 'experiences and feelings associated with that search and that connection' is 'I feel peaceful'. The items that were included in the FACIT-Sp were taken from the original FACIT-G interviews with patients as well as hospital chaplains. In the development of the scale the judgement of the participants was included since they were asked what they see as aspects of spirituality, thus contributing to the content of the scale. In this way the relevance of the items for the population in the study as assessed. The study appears, however, to lack the description of the purpose of the measurement instrument (whether it is discriminative, evaluative or predictive). Peterman et al. (2002) mention in their study that the items that measure the Meaning/Peace subscale appear to be a good measure of the aspects of spirituality as described in the theoretical framework, which is based on the theory of Mickley, Soeken and Bechler (1992) and Larson, Swyers and McCullough (1998). They describe the aspects of spirituality as a sense of meaning and purpose, as well as a feeling of harmony and peace which derives from a connection to something larger than the self. Their conclusion that the items of the FACIT-Sp reflect these aspects is based on the face validity of the items in the Meaning/Peace subscale. In general this part of the methodology that concerns the content validity is well described, complying with 4 of the 5 COSMIN criteria for assessing content validity as presented in Table 3. However, because of a lack of elaboration of the purpose of measurement and based on the "worst score counts" principle, the content development of this study is rated as *poor*.

Table 3

Assessment of content validity of the study of Peterman et al. (2002)

	Yes	No	NA
1. Was there an assessment of whether all items refer to relevant aspects of the construct to be measured?	X		
2. Was there an assessment of whether all items are relevant for the study population? (e.g. age, gender, disease characteristics, country, setting)	X		

3. Was there an assessment of whether all items are relevant for the purpose of the measurement instrument? (discriminative, evaluative, and/or predictive)		X
4. Was there an assessment of whether all items together comprehensively reflect the construct to be measured?	X	
5. Were there any important flaws in the design or methods of the study	X	

Concerning the hypotheses testing (construct validity), in the methodology of the study the sample size (N = 1617) was included and adequately described in the analysis of the study. However, no information is given about the missing items. Researchers also adequately described in their study that they hypothesized a priori that respondents who score high on the Profile of Mood States – Short Form (POMS – SF) would have lower scores on the FACIT-Sp and that the Meaning/Peace subscale would correlate positively with other spirituality scales, such as the Spiritual Beliefs Inventory (SBI). However, no absolute or relative magnitude were described in the methodology concerning the correlations. Researchers provided the following description of the comparator instruments in their methodology. The POMS – SF measures subjective mood states such as anxiety/tension, vigor and depression. The SBI is consisting of two subscales; one assessing spiritual and religious beliefs, while the other measures social support obtained from one's religious colleagues and leaders. This aspect lacks information on how depression (and anxiety/tension and vigor) is exactly described. Subsequently, the measurement properties of these comparator instruments were described in the study and references were provided for a more detailed description of the measurement properties. Furthermore, researchers adequately present in their study the statistical methods they used to test their hypotheses; values of Spearman correlations indicate the direction and magnitude of the correlations. The aspect of hypotheses testing is in general well described in this study, complying with 7 of 10 COSMIN criteria for assessing construct validity (Table 4). However, because of methodological flaws like a lack of elaboration on the missing items, how the missing items were handled and a lack of information about the (absolute or relative) magnitude of the correlations, the methodology on this aspect is rated as *poor*.

Table 4

Assessment of construct validity (hypotheses testing) of the study of Peterman et al. (2002)

	Yes	No	NA
1. Was the percentage of missing items given?		X	
2. Was there a description of how missing items were handled?		X	
3. Was the sample size included in the analysis adequate?	X		
4. Were hypotheses regarding correlations or mean differences formulated a priori (i.e. before data collection)?	X		
5. Was the expected direction of correlations or mean differences included in the hypotheses?	X		
6. Was the expected absolute or relative magnitude of correlations or mean differences included in the hypotheses?		X	
7. for convergent validity: Was an adequate description provided of the comparator instrument(s)?	X		
8. for convergent validity: Were the measurement properties of the comparator instrument(s) adequately described?	X		
9. Were there any important flaws in the design or methods of the study?	X		
10. Were design and statistical methods adequate for the hypotheses to be tested?	X		

Review of the Spiritual Well-Being Scale (Ellison & Paloutzian, 1982)

Ellison and Paloutzian (1982) reasoned that ‘good life’ could be explained by looking at the material, psychological and spiritual well-being. Thus the Spiritual Well-Being Scale was developed in order to include the important third dimension, spiritual well-being, which was missing thus far in the measure of (general) well-being. They based the scale on the theory of Moberg (1971) and Blaikie and Kelsen (1979) who describe spiritual well-being as two dimensional: the vertical dimension refers to the sense of well-being in relation to “God” (the

religious well-being (RWB)) and the horizontal dimension refers to the "sense of life purpose and life satisfaction, with no reference to anything specifically religious", the existential well-being (EWB).

The SWBS is a self-report instrument consisting of 10 items that measure the existential well-being. Each of the items is rated on a six-point Likert scale, ranging from *strongly agree* to *strongly disagree* (Bufford et al., 1991. In the initial development of the SWBS, students from (Christian) colleges in California and the University of Idaho were involved. The total sample counted 117 students. In the following years SWBS data became available on many other samples.

Spiritual well-being was found to be related to other constructs, such as self-esteem (a positive relationship was found) and one's perceived level of social competence, and showed also high correlations with other scales, such as the UCLA Loneliness Scale (negative correlation) and Purpose in Life Test (positive correlation). Coefficient alpha showed an internal consistency of the items of .78 on the existential well-being subscale.

Evaluation. Bufford et al. (1991) describe in their study that spiritual well-being comprises two aspects, religious well-being and existential well-being, which are both measured by 10 items. However, since the study of Genia (2001) failed to confirm the presence of specifically two aspects, it is not clear whether the items refer to those relevant aspects of spiritual well-being. Furthermore, Bufford et al. (1991) describe that the scale was developed with a variety of samples; from college students to specific religious groups (e.g. pastors) and from religious to non-religious participants. In this way, the items were applicable to a variety of groups. However, this aspect is briefly described and there is no elaboration, nor in the additional article. Furthermore, the study lacks a description on whether the items are relevant for the purpose of the measurement instrument. In the study is mentioned that the items that measure the existential well-being subscale appear to be a good measure of the aspects of EWB; well-being in relation to the world around us, which includes a sense of life purpose and life satisfaction, based on the theory of Moberg (1971) and Blaikie and Kelsen (1979). Bufford et al. (1991) also mention that the construct of SBWS insured a good face validity. However, there is no information regarding the EWB subscale, but rather to the SWBS as a whole, including the RWB. On the basis of this information the methodology of this study complies with 3 of 5

COSMIN criteria for the assessment of content validity (Table 5). However, because of a lack of description of whether all items refer to relevant aspects of the construct and the lack of information on whether the items are relevant for the study population, this aspect is rated as *poor* following the "worst score counts" principle.

Table 5

Assessment of content validity of the study of Bufford et al. (1991)

	Yes	No	NA
1. Was there an assessment of whether all items refer to relevant aspects of the construct to be measured?		X	
2. Was there an assessment of whether all items are relevant for the study population? (e.g. age, gender, disease characteristics, country, setting)	X		
3. Was there an assessment of whether all items are relevant for the purpose of the measurement instrument? (discriminative, evaluative, and/or predictive)		X	
4. Was there an assessment of whether all items together comprehensively reflect the construct to be measured?	X		
5. Were there any important flaws in the design or methods of the study	X		

Concerning the hypotheses testing (construct validity), the study does not clearly describe whether the sample size was included in the analysis. Although it is mentioned that the first sample on which the scale was tested, existing of college students, had a sample size of N = 117, it is not described whether and how it was used for analysis. Furthermore, neither in the study of Bufford et al. (1991) nor in the additional study of Genia (2001) is described whether hypotheses regarding correlations or mean differences were formulated a priori, or what the expected direction of the correlations and mean differences was and what the expected magnitude of the correlations or mean differences was. Consequently the article of Genia (2001) provides an adequate description of the Allport-Ros Religious Orientation Scale (ROS), but only briefly describes the Beck Depression Inventory (BDI) and the Rosenberg Self-Esteem Scale. The

measurement properties of the comparator instruments however, are not described. Based on these COSMIN criteria, the methodology concerning hypotheses testing is also rated *poor*. This part of the methodology complies with 2 of 10 COSMIN criteria (Table 6) and therefore, based on the "worst score counts" principle, is rated as *poor*.

Table 6

Assessment of construct validity (hypotheses testing) of the study of Bufford et al. (1991)

	Yes	No	NA
1. Was the percentage of missing items given?		X	
2. Was there a description of how missing items were handled?		X	
3. Was the sample size included in the analysis adequate?			X
4. Were hypotheses regarding correlations or mean differences formulated a priori (i.e. before data collection)?			X
5. Was the expected direction of correlations or mean differences included in the hypotheses?		X	
6. Was the expected absolute or relative magnitude of correlations or mean differences included in the hypotheses?		X	
7. for convergent validity: Was an adequate description provided of the comparator instrument(s)?	X		
8. for convergent validity: Were the measurement properties of the comparator instrument(s) adequately described?		X	
9. Were there any important flaws in the design or methods of the study?	X		
10. Were design and statistical methods adequate for the hypotheses to be tested?			

Discussion

The goal of this study was to identify the most important spiritual well-being scales based on the frequency and assess them on their psychometric quality by rating the development of the scales in the relevant studies, and subsequently to draw conclusions regarding the construct validity (by hypotheses testing) and content validity. Concerning the most frequently used spiritual well-being scales, we learned that the FACIT-Sp and SWBS are by far the most frequently used spiritual well-being scales. Subsequently the methodology concerning the content and construct validity of the relevant studies was assessed using the COSMIN checklist.

Methodological recommendations

Regarding the development of the content validity, the methodology in the study of Peterman et al. (2002) as well as Bufford et al., assessed by the COSMIN checklist, was rated as *poor*. In the study of Peterman et al. (2002) almost all COSMIN criteria for content validity (4 of 5) were extensively described and elaborated on, while 1 criterion was missing and thus rated *poor*; assessment of whether all items are relevant for the purpose of the measurement instrument (Table 3). This led to the *poor* overall rating of content development, based on this worst score. The question remains however, whether this is a fair reflection of the quality of the content development since only 1 of 5 criteria was rated *poor*. The same counts for the study of Bufford et al. (1991), although concerning this study 3 of 5 criteria complied with the COSMIN criteria for content validity (Table 5). Two criteria were rated *poor*; whether all items refer to relevant aspects of the construct to be measured and whether all items are relevant for the purpose of the measurement instrument.

An observation from this review study regarding the content development is that the concept of spirituality is often mixed up or overlaps with the concept of religiousness. Although this distinction is clearly described in the SWBW, where a distinction is made between items referring to RWB and EWB, it is not clearly described in the FACIT-Sp. Therefore the scale may pertain a spirituality as well as a religiousness aspect. However, in order to integrate the spiritual well-being in the measuring of general well-being, this concept needs to be clearly defined so that a scale particularly measures the aspect of spirituality. A first step could be to define this concept. A credible suggestion would involve the same or similar approach as followed in this

present study; to try to define spirituality on the basis of the most frequent aspects of this definition in the literature, and thus come to an accepted definition, leaving out the aspect of religiousness. In that way, a scale would be specifically measuring the spirituality aspect and thus could be integrated in a 'general well-being measurement'. This issue however, is well handled in the development of the SWBS where a clear distinction is made between RWB and EWB. This may imply that we do not necessarily need new spirituality scales to be developed in order to measure this concept, but rather focus on further development and improvement of existing scales.

Another observation regarding the content development concerns the other, less frequently used scales that were found, but not reviewed in this study. Although these scales share similarities in content with the FACIT-Sp and SWBS, there are some differences in that are worth discussing. When taking a closer look to the content of the Spiritual Well-Being Questionnaire (SWBQ) and the Spiritual Health and Life-Orientation Measure (SHALOM) (two randomly chosen scales that came out as less frequently used), their content appears to be developed according the Four Domains Model of Spiritual Health and Well-Being (4D model) based on the study of Fisher (1998). This 4D Model involves four domains on which the item development of the scale is based; personal, communal, environmental and transcendental domain of spiritual well-being. Thus, these spirituality scales seem to be based on a broader conceptualization of spiritual well-being whereby the scales consequently measure different, broader aspects of spirituality.

Regarding the development of construct validity, the methodology of the study of Peterman et al. (2002) as well as Bufford et al. (1991) was also rated as *poor*. Although both studies received a *poor* rating, there is a difference in how they scored on the COSMIN criteria for assessing construct validity. The study of Peterman et al. (2002) complied with 7 of 10 criteria (Table 4), while the study of Bufford et al. (1991) complied with 2 of 10 criteria (Table 6). This implies that the construct development as described in the study of Peterman et al. (2002) may not be as bad as the *poor* rating may imply, only lacking information on the percentage of missing items, how the missing items were handled and the inclusion of the expected absolute or relative magnitude of correlations or mean differences in the hypotheses. Following the "worst score counts" principle however, led to an overall *poor* rating, which again

may not entirely give a fair impression.

General recommendations

This review study explored how the previous studies contributed to the field of spiritual well-being. Studies of the past decades on this topic indicate that a lot of effort has been done to study the concept of spirituality. Most notable however, is that most of the research in this field is focused on spiritual well-being in the clinical context, for instance in the recovery process of patients, providing them for example hope and peace. Even though several studies do mention the importance of spiritual well-being as a component in the measuring of general well-being, elaborated research on this aspect, as mentioned in the introduction of this study, is limited. This emphasizes the importance of more extensive research of spiritual well-being in the measuring of general well-being.

Strengths and weaknesses of the review study

We learned that the FACIT-Sp and SWBS are the most frequently used spiritual well-being scales and based on the COSMIN checklist the methodology regarding content validity and hypotheses testing of both studies has been rated as *poor*. Nevertheless there are some strengths and weaknesses regarding this review study which deserve attention.

Regarding the methodology of this review study, following the COSMIN checklist the scales have been rated as *poor* using the "worst score counts" principle. While the use of the COSMIN checklist as a tool is relatively new and thus in constant development, this process of assessing a scale has its advantages and disadvantages. An advantage of this principle is that possible flaws will be detected because it is not possible to compensate for them by higher scores of other properties (Terwee et al., 2012). However, a disadvantage of this method is that one *poor* rating for example may lead to a *poor* overall rating of a measurement property and thus all aspects need to be rated as *good* or *excellent* in order for a measurement property to be considered as *good* or *excellent* (Denman et al., 2017). Therefore it may be wise to consider alternatives for "worst score counts" principle to rate the scales and keep an eye on the developments on this issue in order to find a best fitting, reliable scoring method. A possible alternative, as mentioned in the study of Denman et al. (2017), could be to 'average' the scores

of the COSMIN criteria in order to give a measurement property an average score. For example the methodology of the key article of Peterman et al. (2002) has been rated as *poor* and the question may arise whether this is a not a too harsh conclusion. The methodology in this article appears to be well described and provides a clear impression of the methodology. Using the "worst score counts" principle however, the overall rating is *poor*. If, for example, an average score would be applied in this case, as suggested by Denman et al. (2017), the outcome of the review would have been different. This is something to keep in mind when interpreting the results.

Another improvement of the assessment using the COSMIN checklist could be to make a distinction between major and minor flaws regarding the COSMIN criteria. The criteria in the COSMIN checklist, as presented in Table 1 and 2, are all weighted equally in the assessment of the methodology, which raises the question whether this is fair. Some of the criteria could be seen as more important than others in assessing the quality of the scale development. For example, when assessing the development of content validity, it could be seen as more important to check whether "all items refer to relevant aspects of the construct to be measured" (criterion 1 of content validity) than "whether all items are relevant for the purpose of the measurement instrument". In this way "minor flaws" may have less effect on the overall rating of the methodology of a study, providing a better fitting overall rating.

Another aspect of this review study that deserves attention is that scales were selected on the basis of the frequency. A consequence of this method is that the focus lies solely on the most frequently used scales and no attention is paid on scales that are less frequently used. An advantage of this approach is that because these scales are most frequently used and more literature of these scales is available, perhaps more can be searched regarding the (methodology of) the psychometric properties of the scales. A disadvantage however is that the possibility exists that qualitatively good scales are not explored and left out of the study which may have been relevant to the research question of this study. Even though the approach in this study (to explore the most frequently used scales) was logical considering the feasibility of this study, future research may be focused more on the unexplored side, the less frequently used scales.

Concerning the sampling method, on every 100 articles the first 50 were selected for screening. This brings about two concerns. At first, it means that through this method bias may

occur because of the alphabetical order of the authors in the dataset. Some articles of certain authors, dependent on the last names, may be completely left out of the dataset using this method. A second concern is that eventually half of the articles from the dataset were not screened and thus some spiritual well-being scales may be missed. However, this second concern might have been compensated for since the database PsycINFO has the option 'Test & Measures' that offers users the opportunity to see all occurring measurement instruments (or scales) in that particular set of articles. With this option it was possible to confirm that no other significant scales were missed in the screened set of articles, which can be seen as a strength in the methodology of this study.

Finally, another strength of this review study concerns the selection of the key articles. Although the key article regarding the SWBS was quite limited in describing the methodology, a more recent article was chosen; Bufford et al. (1991), which provided a more extensive description of the methodology. The key article of Peterman et al. (2002), regarding the FACIT-Sp, on the other hand, provided an extensive description of the methodology and in that perspective served as a fitting key article. Furthermore, in this study was compensated for the missing information of the development of the SWBS by selecting an additional article of Genia (2001) in order to have a complete as possible image of the methodology.

Conclusion

To summarize, based on the COSMIN checklist the methodology of the content validity and construct validity of both key articles has been rated as *poor*. The use of the COSMIN checklist and the "worst score counts" principle has its strengths and weaknesses. Regarding the use of COSMIN checklist, the criteria are all equally weighted while some of the criteria seem to be more relevant in reviewing the methodology of a study than others. The "worst score counts" principle on the other hand leaves no room for a methodology to be rated *good* for example, when it receives one or even two *poor* ratings on the COSMIN criteria. Also, the less frequently used scales leave a good impression regarding their content development, even though they were not extensively reviewed in this study which leaves room for future research. Furthermore, even though the concept of spiritual well-being has often been the focus for research, extensive research on this topic is limited to a specific context, the clinical context, and spirituality is often

connected or mixed up with the concept of religiousness. This was, however, well handled in the development of the SWBW, where a clear distinction is made between the existential and the religiousness aspect. Therefore recommendations for future research imply more attention for the usefulness of the less frequently used SWB scales (more psychometric exploration), to make a distinction between “major” and “minor” flaws regarding the COSMIN criteria, in order to come to a better fitting conclusion and to apply a more fitting alternative to the “worst score counts” principle (for example an average score as proposed in Denman et al. (2017)). Also it is important to study the concept of SWB as a distinct concept, leaving out religiousness and subsequently to find a proper scale that measures primarily the SWB, covers the essential aspects of SWB and can be used in the measuring of general well-being.

References

(References marked with an asterisk are used to review the scales)

Agli, O., Bailly, N., & Ferrand, C. (2015). Spirituality and religion in older adults with dementia: A systematic review. *International Psychogeriatrics*, *27*(5), 715–725. doi: 10.1017/S1041610214001665

Bieda, A., Hirschfeld, G., Schonfeld, P., Brailovskaia, J., Zhang, X.C., & Margraf, J. (2017). Universal happiness? Cross-cultural measurement invariance of scales assessing positive mental health. *Psychological Assessment*, *29*(4), 408-421. doi: 10.1037/pas0000353

Bredle, J.M., Salsman, J.M., Debb, S.M., Arnold, B.J., & Cella, D. (2011). Spiritual Well-Being as a component of Health-Related Quality of Life: The Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being Scale (FACIT-Sp). *Religions*, *2*(1), 77–94. doi: 10.3390/rel2010077

* Bufford, R.K., Paloutzian, R.F., & Ellison, C.W. (1991). Norms for the Spiritual Well-Being Scale. *Journal of Psychology and Theology*, *19*(1), 56–70. doi: 10.1177/009164719101900106

Denman, D., Speyer, R., Munro, N., Pearce, W.M., Chen, Y., & Denman, D. (2017). Psychometric properties of language assessments for children aged 4 – 12 years : A systematic review. *Frontiers in Psychology*, *8*(9). doi: 10.3389/fpsyg.2017.01515

Dutt, A.K. & Radcliff, B. (2009). Happiness, economics and politics: towards a multi-disciplinary approach. *Journal of Economics*, *102*(2), 189-192. doi: 10.1007/s00712-010-0168-6

Ellison, C.W. (1983). Spiritual well-being: conceptualization and measurement. *Journal of Psychology and Theology*, *11*(4), 330-338. doi: 10.1177/009164718301100406

Fuchsman, K. (2016). The age of miracle and wonders: Paul Simon and the changing American Dream. *Journal of Psychohistory*, *43*(4), 288-301

* Genia, V. (2001). Evaluation of the spiritual well-being scale in a sample of college students. *International Journal for the Psychology of Religion*, *11*(1), 25-33. doi: 10.1207/S15327582IJPR1101_03

Guo, C., Tomson, G., Guo, J., Li, X., Keller, C., & Soderqvist, F. (2016). Erratum to: psychometric evaluation of the Mental Health Continuum-Short Form (MHC-SF) in Chinese adolescents – a methodological study. *Health Quality of Life Outcomes, 14*(1), 263. doi: 10.1186/s12955-015-0404-4

Keyes, C.L.M. (2002). The mental health continuum: from languishing to flourishing in life. *Journal of Health and Social Behavior, 43*(2), 207-222. doi: 10.2307/3090197

Kim, Y., Kee, Y., & Lee, S.J. (2015). An analysis of the relative importance of components in measuring community well-being: perspectives of citizens, public officials and experts. *Social Indicators Research, 121*(1), 345-369. doi: 10.1007/s11205-014-0652-4

Lamers, S.M.A. (2012). *Positive Mental Health; measurement, relevance and implications* Enschede: GildePrint. doi: 10.3990/1.9789036533706

Lamers, S.M.A., Westerhof, G.J., Bohlmeijer, E.T., ten Klooster, P.M., & Keyes, C.L.M. (2011). Evaluating the psychometric properties of the Mental Health Continuum-Short Form (MHC-SF). *Journal of clinical psychology*, *67*(1), 99-110. doi: 10.1002/jclp.20741

Lukat, J., Margraf, J., Lutz, R., Van der Veld, W. M., & Becker, E.S. (2016). Psychometric properties of the positive mental health scale (PMH-scale). *BMC Psychology*, *4*(1), 1–14. doi: 10.1186/s40359-016-0111-x

Maccagnan, A., Wren-Lewis, S., Brown, H., & Taylor, T. (2018). Well-being and society: towards quantification of the co-benefits of well-being. *Social Indicators Research, 67*(5), 1-27. doi: 10.1007/s11205-017-1826-7

McHugh, M.L. (2012). Interrater reliability: the kappa statistic. *Biochemia Medica, 22*(3), 276-282.

Moberg, D.O. (2008). Spirituality and Aging: Research and Implications. *Journal of Religion, Spirituality & Aging, 20*(1–2), 95–134. doi: 10.1080/15528030801922038

Mokking, L.B., Terwee, C.B., Patrick, D.L., Alonso, J., Stratford, P.W., Knol, D.L., Wouter, L.M., & De Vet, H.C.W. (2012). *COSMIN checklist manual*. Retrieved from http://www.cosmin.nl/images/upload/files/COSMIN%20checklist%20manual%20v9.pdf

Panzini, R.G., Mosqueiro, B.P., Zimpel, R.R., Bandeira, D.R., Rocha, N.S., & Fleck, M.P. (2017). Quality-of-life and spirituality. *International Review of Psychiatry, 29*(3), 263–282. doi: 10.1080/09540261.2017.1285553

* Peterman, A.H., Fitchett, G., Brady, M.J., Hernandez, L., & Cella, D. (2002). Measuring spiritual well-being in people with cancer: the functional assessment of chronic illness therapy-spiritual well-being scale (FACIT-Sp). *Annals of Behavioral Medicine, 24*(1), 49-58. doi: 10.1207/S15324796ABM2401_06

Seligman, M.E.P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist, 55*, 5-14.

Senreich, E. (2013). An inclusive definition of spirituality for social work education and practice. *Journal of Social Work Education, 49*(4), 548-563. doi: 10.1080/10437797.2013.812460

Stratham, J., & Chase, E. (2010). *Childhood wellbeing – A brief overview.* Loughborough: Childhood Wellbeing Research Centre.

Soleimani, M.A., Pahlevan Sharif, S., Allen, K.A., Yaghoobzadeh, A., Sharif Nia, H., & Gorgulu, O. (2017). Psychometric properties of the Persian version of Spiritual Well-Being Scale in patients with acute myocardial infarction. *Journal of Religion and Health, 56*(6), 1981–1997. doi: 0.1007/s10943-016-0305-9

Tannenbaum, C., Lexchin, J., Tamblyn, R., & Romans, S. (2009). Indicators for measuring mental health: towards better surveillance. *Healthcare Policy, 5*(2), 177-186. doi: 10.12927/hcpol.2013.21180

Terwee, C.B., Mokkink, L.B., Knol, D.L., Ostelo, R.W.J.G., Bouter, L.M., & de Vet, H.C.W. (2012). Rating the methodological quality in systematic reviews of studies on measurement properties: A scoring system for the COSMIN checklist. *Quality of Life Research*, *21*(4), 651–657. https://doi.org/10.1007/s11136-011-9960-1

Van Dierendonck, D. (2012). Spirituality as an essential determinant for the good life, its importance relative to self-determinant psychological needs. *Journal of Happiness Studies*, *13*(4), 685–700. doi: 10.1007/s10902-011-9286-2

Wang, C.W., Chow, A.Y.M., & Chan, C.L.W. (2017). The effects of life review interventions on spiritual well-being, psychological distress, and quality of life in patients with terminal or advanced cancer: A systematic review and meta-analysis of randomized controlled trials. *Palliative Medicine*, *31*(10), 883–894. doi: 10.1177/0269216317705101

Appendix A

Summary of the psychometric characteristics of spiritual well-being scales

	Functional Assessment of Chronic Ilness Therapy – Spiritual well-being scale (FACIT-Sp)	***Spiritual Well-Being Scale (SWBS)***
Key Publication	Peterman, Fitchett, Brady, Hernandez & Cella (2002)	Bufford, Paloutzian & Ellison (1991), Genia (2001)
Number of Items	12 (8 in the subscale Meaning/Peace, or existential and 4 in the subscale Faith, or religiousness)	20: 10 per subscale; religious well-being and existential well-being (Bufford et al., 1991) although Genia (2001) mentioned the possibility of more subscales.
Scaling	5-point Likert scale	6-point Likert scale (Bufford et al., 1991)
Theoretical Basis	Mickley, Soeken and Bechler (1992) and Larson, Swyers and McCullough (1998)	Moberg (1971) and Blaikie and Kelsen (1979) (Bufford et al., 1991)
Construct	A personal search for meaning and purpose in life, connection with a transcendent dimension of existence, and the experiences and feelings	Spiritual well-being consisting of two dimensions: the religious aspect of spiritual well-being (refers to God) and existential aspect of spiritual

	associated with that search and that connection.	well-being (refers to the relations to the world about us, including a sense of life purpose and life satisfaction) (Bufford et al., 1991)
Study Population and Country	Two independent samples of cancer, HIV or AIDS patients and survivors form the United States and Puerto Rico. A subsequent validation took place with over 131 patients and several hospital chaplains. Participants had to be over the age of 18 and had current or past diagnoses of cancer and/or HIV infection/AIDS (except for the chaplains). Total n=1617 (1748 including the subsequent validation). Median age was 54,6 years. Country: USA and Puerto Rico.	In the initial development of the SWBS, students from (Christian) colleges in California and the University of Idaho were involved. Total n=117. No information about age. USA. (Bufford et al., 1991)
Quality of content validity conform COSMIN	*Poor*: no description of the purpose of the measurement instrument.	*Poor*: not clear whether the items refer to those relevant aspects of Spiritual Well-Being and lack of description on whether the

		items are relevant for the purpose of the measurement instrument.
Quality of construct validity (hypotheses testing) conform COSMIN	*Poor*: no information given about the missing items and no absolute or relative magnitude were described in the methodology concerning the correlations.	*Poor*: no description of whether the hypotheses regarding correlations or mean differences were formulated a prior, or what the expected direction of the correlations and mean differences was and the expected magnitude of the correlations or mean differences.

Appendix B

Functional Assessment of Chronical Illness Therapy – Spiritual Well-Being Scale

		Not at all	A little bit	Some -what	Quite a bit	Very much
Sp1	I feel peaceful	0	1	2	3	4
Sp2	I have a reason for living	0	1	2	3	4
Sp3	My life has been productive	0	1	2	3	4
Sp4	I have trouble feeling peace of mind	0	1	2	3	4
Sp5	I feel a sense of purpose in my life	0	1	2	3	4
Sp6	I am able to reach down deep into myself for comfort	0	1	2	3	4
Sp7	I feel a sense of harmony within myself	0	1	2	3	4
Sp8	My life lacks meaning and purpose	0	1	2	3	4
Sp9	I find comfort in my faith or spiritual beliefs	0	1	2	3	4
Sp10	I find strength in my faith or spiritual beliefs	0	1	2	3	4
Sp11	My illness has strengthened my faith or spiritual beliefs	0	1	2	3	4
Sp12	I know that whatever happens with my illness, thingswill be okay	0	1	2	3	4

Appendix C

Spiritual Well-Being Scale

For each of the following statements circle the choice that best indicates the extent of your agreement or disagreement as it describes your personal experience:

SA = Strongly Agree
MA = Moderately Agree
A = Agree
D = Disagree
MD = Moderately Disagree
SD = Strongly Disagree

1. I don't find much satisfaction in private prayer with God	SA	MA	A	D	MD	SD
2. I don't know who I am, where I came from, or where I'm going	SA	MA	A	D	MD	SD
3. I believe that God loves me and cares about me	SA	MA	A	D	MD	SD
4. I feel that life is a positive experience	SA	MA	A	D	MD	SD
5. I believe that God is impersonal and not interested in my daily situations	SA	MA	A	D	MD	SD
6. I feel unsettled about my future	SA	MA	A	D	MD	SD
7. I have a personally meaningful relationship with God	SA	MA	A	D	MD	SD
8. I feel very fulfilled and satisfied with life	SA	MA	A	D	MD	SD
9. I don't get much personal strength and support from my God	SA	MA	A	D	MD	SD
10. I feel a sense of well-being about the direction my life is headed in	SA	MA	A	D	MD	SD
11. I believe that God is concerned about my problems	SA	MA	A	D	MD	SD
12. I don't enjoy much about life	SA	MA	A	D	MD	SD
13. I don't have a personally satisfying relationship with God	SA	MA	A	D	MD	SD
14. I feel good about my future	SA	MA	A	D	MD	SD
15. My relationship with God helps me not to feel lonely	SA	MA	A	D	MD	SD
16. I feel that life is full of conflict and unhappiness	SA	MA	A	D	MD	SD
17. I feel most fulfilled when I'm in close communion with God	SA	MA	A	D	MD	SD
18. Life doesn't have much meaning	SA	MA	A	D	MD	SD
19. My relation with God contributes to my sense of well-being	SA	MA	A	D	MD	SD
20. I believe there is some real purpose for my life	SA	MA	A	D	MD	SD

Note: Items are scored from 1 to 6, with a higher number representing more well-being. Reverse scoring for negatively worded items. Odd-numbered items assess religious well-being; even numbered items assess existential well-being.