

Instruments Measuring Spirituality in Clinical Research: A Systematic Review

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INTRODUCTION: Numerous instruments have been developed to assess spirituality and measure its association with health outcomes. This study's aims were to identify instruments used in clinical research that measure spirituality; to propose a classification of these instruments; and to identify those instruments that could provide information on the need for spiritual intervention.

METHODS: A systematic literature search in MEDLINE, CINHALL, PsycINFO, ATLA, and EMBASE databases, using the terms "spirituality" and "adults," and limited to journal articles was performed to identify clinical studies that used a spiritual assessment instrument. For each instrument identified, measured constructs, intended goals, and data on psychometric properties were retrieved. A conceptual and a functional classification of instruments were developed.

RESULTS: Thirty-five instruments were retrieved and classified into measures of general spirituality (N=22), spiritual well-being (N=5), spiritual coping (N=4), and spiritual needs (N=4) according to the conceptual classification. Instruments most frequently used in clinical research were the *FACIT-Sp* and the *Spiritual Well-Being Scale*. Data on psychometric properties were mostly limited to content validity and inter-item reliability. According to the functional classification, 16 instruments were identified that included at least one item measuring a current spiritual state, but only three of those appeared suitable to address the need for spiritual intervention.

CONCLUSIONS: Instruments identified in this systematic review assess multiple dimensions of spirituality, and the proposed classifications should help clinical researchers interested in investigating the complex relationship between spirituality and health. Findings underscore the scarcity of instruments specifically designed to measure a patient's current spiritual state. Moreover, the relatively limited data available on psychometric properties of these instruments highlight the need for additional research to

determine whether they are suitable in identifying the need for spiritual interventions.

KEY WORDS: spirituality; spiritual assessment; spiritual intervention; spiritual well-being; spiritual needs.

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INTRODUCTION

Over the last 15 years, numerous studies on the relationship between spirituality and health have been published in different fields of research such as medicine, nursing, sociology, psychology, and theology. Initially most researchers investigated the association between religiousness or religion, and health^{1,2}. However, the relative decline of the Judaeo-Christian religions in Western societies has led researchers to consider the broader concept of spirituality³⁻⁶.

Clinical research on the relationship between spirituality and health finds that spirituality is a critical resource for many patients in coping with illness, and is an important component of quality of life, especially for those suffering chronic or terminal diseases^{7,8}. However, some aspects of spirituality have been negatively associated with health outcomes. For example, low spiritual well-being and religious struggle have been associated with higher mortality rates, more severe depression, hopelessness, and desire for hastened death.^{9,10} These observations have led clinicians to agree about the importance of assessing and addressing spiritual issues in health care settings^{11,12}.

Promoting spiritual assessment and offering spiritual interventions within routine health care settings require a strong evidence base of clinical research. The foundation of such work is the availability of valid spiritual assessments that are appropriate in clinical settings. Hampering these efforts is the fact that, at present, no definition of spirituality is universally endorsed and no consensus exists on the dimensions of spirituality within health research⁵. As a result, numerous conceptualizations of spirituality have emerged⁶, making it difficult to understand the different constructs and aims of instruments that assess spirituality. Moreover, it is unknown whether some of these instruments would also be appropriate in clinical settings to assess a patient's current spiritual state and to determine the need

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for spiritual intervention. These are important information gaps that must be addressed to improve the assessment of spirituality within health care.¹³

Several authors have tried to develop a catalogue of instruments to assess spirituality,^{14–18} but these reviews were not systematic, limited to specific populations, and essentially provided only descriptive information. To-date, no systematic review has been performed to catalogue and classify available instruments to assess spirituality within clinical health care research.

The purpose of this study is to provide a systematic review of instruments used in clinical research to assess spirituality. Additional objectives are: (1) to develop a conceptual and functional typology for classifying these instruments in order to assist researchers and clinicians in selecting the most appropriate instrument for their purposes; and (2) to identify instruments that could potentially be used to investigate patients' current spiritual state and identify the need for spiritual intervention in a clinical setting.

METHODS

Working definitions of the constructs of spirituality and religion^{4–6,19–23} that informed the present study are summarized in Box 1.

Box 1: Working definitions of constructs of spirituality and religion:

Religion is defined as an organized system of beliefs, practices, and symbols designed to facilitate closeness to a higher power.¹⁹

Religiousness is usually considered to include three major dimensions: organizational religious activities (e.g., religious service attendance), nonorganizational religious activities (e.g., private and personal religious behaviours), and subjective or intrinsic religiousness, namely, the extent to which religion is the primary motivating factor in peoples' lives, drives behavior, and decision-making.^{20,21}

Spirituality definitions often include a sense of transcendence beyond one's immediate circumstances, and other dimensions such as purpose and meaning in life, reliance on inner resources, and a sense of within-person integration or connectedness.^{4,6}

Spiritual well-being concept is generally defined with a vertical dimension that refers to our sense of well-being in relation to God or a higher power, and a horizontal dimension that refers to a sense of life purpose and life satisfaction.^{22,23}

Spiritual needs are generally defined as something required or wanted by an individual to find a purpose and meaning in life (e.g., need to give and receive love, to have meaning, purpose, values, hope, and to experience transcendence).

Spiritual support is defined as an intimate connection with a higher power and a perceived positive influence.

The Spiritual state can be defined as a dynamic state in which the patient feels regarding his or her spirituality. This state can fluctuate on a hypothesised spectrum of spiritual wellness, ranging from spiritual distress to spiritual well-being.

Search Strategy

A literature search, not restricted by language, was performed in Ovid MEDLINE (1948 to January 2011), Ovid ATLA Religion (1949 to November 2010), Ovid PsycINFO (1806 to January 2011), CINHALL-Cumulative Index to Nursing & Allied Health Literature (1993 to January 2011), and EMBASE (1980 to January 2011) electronic databases, using the term "spirituality" and "adult\$." This search was limited to Human and to All journal articles.

First, three independent reviewers (SM, ER, and SR) selected citations that might have included a spiritual assessment instrument used to investigate the association between spirituality and health (physical or mental), health-related quality of life, or any other clinical outcome (e.g., health services used). Articles were selected based on the review of the abstract. The full text was examined when information about the instrument was not available in the abstract. Papers were excluded if: (1) an instrument to assess spirituality was not used (e.g., position paper, surveys, qualitative studies); (2) they investigated spirituality or attitudes toward spirituality/religiousness among health professionals, chaplains, or family members; (3) only measures of religiousness were used (e.g., religious affiliation, frequency of church attendance); (4) they used an instrument without a specific construct of spirituality (i.e., global quality of life); or (5) spirituality was assessed with a single item (e.g., "How spiritual do you consider yourself?").

For the three searches, inter-rater agreements between reviewers for citation selection ranged from 82% to 98%.

Selected papers were then subjected to further, in-depth examination to retrieve instruments proposed to measure spirituality. Instruments were excluded if: (1) they consisted solely of religiousness items; (2) they assessed only one dimension related to spirituality without the aim to measure spirituality itself (e.g., hope, serenity, purpose in life); (3) there was no evidence that the instrument had been used with clinical outcomes; and (4) no data were available on the psychometric properties of the instrument in a referenced journal.

Finally, the reference lists in the selected papers were also systematically reviewed to identify additional instruments. At the end of this process, scholars and researchers in the field of religion and spirituality were asked to identify any additional instruments meeting our inclusion and exclusion criteria. The list serve of the Religion, Spirituality and Aging formal interest group of the Gerontological Society of America was also used to query researchers and clinicians involved in work on spirituality.

Data on Instruments

For each instrument, the dimensions underlying the construct of spirituality were identified, as well as the intended goals of the instrument. Data on the psychometric properties, defined as described in Box 2^{24,25}, were systematically recorded. When information on correlations with other instruments was available, only those with measures of spirituality and religiousness are reported in this paper to examine criterion validity. Data on concurrent validity were also extracted when available. Furthermore, studies in which the instruments were correlated with (cross-sectional studies) or predictive of (longitudinal studies) health outcomes were also retrieved from the system-

Box 2: Working definitions of psychometric properties used in this research^{24,25}

<p>Reliability</p> <p>Refers to the extent to which a score is free of random error.</p> <p><i>Internal consistency (Coefficient Alpha):</i> Refers to the extent to which all items in the scale measure the same underlying concept, or the convergence of the items on the concept being measured. Coefficient Alpha increases as the items become more homogeneous or similar and as the number of items increases.</p> <p><i>Test-retest:</i> The extent to which repeat administrations of the same measure are consistent</p> <p><i>Inter-rater:</i> The extent to which one observer’s rating of something is consistent with another observer’s rating</p> <p>Validity</p> <p>Refers to the extent to which a measure actually measures what we want it to and does not measure what we do not want it to.</p> <p><i>Criterion-validity:</i> The extent to which the measure correlates with the “Gold standard” measure of that concept.</p> <p><i>Concurrent validity:</i> The extent to which the measure correlates with measures of other variables in hypothesized ways.</p> <p><i>Predictive validity:</i> The extent to which the measure can predict clinical outcomes in the future.</p>

atic search to examine this aspect of concurrent and predictive validity.

For each instrument, an assessment of the comprehensiveness of its validation process was performed, using a score specifically developed for the purpose of this study (see Online Appendix 1). This score was built on the basis of recognized standards in instrument development^{24,25}. This score summarizes the reporting on the content (construct definition, instrument development), internal structure (factor analysis), reliability (internal consistency and test-retest), and validity (criterion validity and concurrent validity) of the instrument. Scores range from 0 to 6, with higher scores indicating a more comprehensive validation process.

Classification of Instruments to Assess Spirituality

The development of instruments aimed at assessing spirituality can be conceived as a two-step process (see Fig. 1). The first step would be the definition of the conceptual aspect of spirituality that the instrument intends to assess. The second step would be the definition of items that operationalize the spirituality concept in question. In this review, we propose a classification of instruments that follows this line of reasoning in instrument development.

1. Conceptual Classification

This classification is based on the underlying concept of spirituality that the instrument mainly intends to capture from the point of view of the authors who developed the instrument. Four common categories of measures are described: general spirituality, spiritual well-being, spiritual support or coping, and spiritual needs.

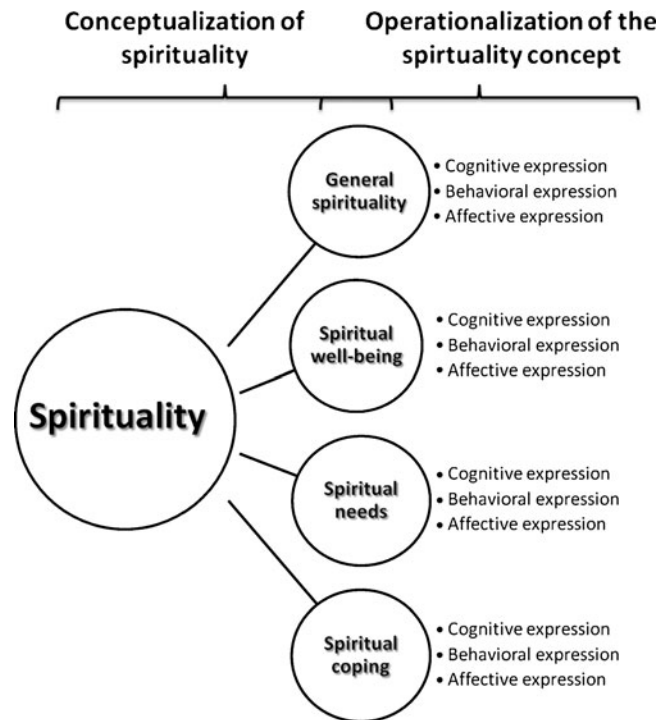


Figure 1. Process generally used to develop instrument to assess spirituality.

2. Functional Classification

This classification is based on the examination of all items within the instrument. Three categories of items are proposed, according to the expression of spirituality they intend to capture.^{26,27}

1. Measures of *cognitive expressions* of spirituality: these items intend to measure attitudes and beliefs toward spirituality (e.g., “Do you believe meditation has value?”). These measures have been shown to be relatively stable within individuals over time²⁸.
2. Measures of *behavioral expressions* (public or private practices) of spirituality (e.g., “How often do you go to church?”). These measures are also supposed to be stable over time.²⁹
3. Measures of *affective expressions* of spirituality: these items intend to capture feelings associated with spirituality (e.g., “Do you feel peaceful?”). These measures illustrate the patient’s spiritual state, which is not necessarily stable over time. Spiritual states might change over time along a hypothesized spectrum of wellness ranging from spiritual well-being to spiritual distress. A spiritual state might be worse because of external stressors such as illness or bereavement, or improved by spiritual intervention.³⁰

Retrieval of Instruments Comprising Items Measuring a “Current” Spiritual State

According to the functional classification described above, among instruments measuring *affective expression* of spiritu-

ality, those using items that measured a *current spiritual state* were further selected by three reviewers (SM, ER, and EM). A triple abstraction process was used, each reviewer being blinded to results from the others. Instruments containing at least one question of spiritual state at the time of assessment were retrieved.

Initial agreement for classification was very good (Fleiss kappa 0.88, $p < 0.001$)³¹. Disagreements between reviewers were discussed and resolved through consensus.

RESULTS

Literature Search

The search strategy (see Fig. 2) identified 1,575 citations in Ovid Medline, ATLA, and PsycINFO databases. The search in CINHAL database identified 356 citations. Finally, the search in EMBASE database identified 1,360 citations, for a total of 3,291 citations.

From these 3,291 citations, 2,854 were excluded because they did not use an instrument to assess spirituality (N=2,068); investigated spirituality in health professionals, chaplains, children, or family instead of patients (N=513); focused solely on religiousness measures (N=154); used an instrument to measure quality of life without a specific focus on spirituality (N=86); used a single-item question (N=33).

Among the remaining 437 citations, 63 instruments assessing spirituality were identified. Among these, 3 were excluded because they exclusively measured religiousness, 12 were excluded because they investigated a domain related to spirituality, but not spirituality *per se* (e.g., the *Herth Hope Scale*³², the *Meaning in Life scale*³³, or the *Serenity Scale*³⁴), 10 were excluded because they were not used in studies measuring health outcomes, and finally 5 instruments were excluded because no psychometric properties were available for the instrument.

At the end of the process, two additional instruments were identified from the citations and the input of experts in the field: the *Spiritual Beliefs Questionnaire*,³⁵ (from references) and the *Spiritual Strategies Scale*³⁶ (from experts).

Thus, 35 instruments used to measure spirituality in clinical research were identified in this systematic search of the literature. Several instruments also had abbreviated forms that were subsequently developed. These are considered as the same instrument in this review.

Instruments to Assess Spirituality

Table 1 lists the selected instruments to assess spirituality^{7,22,28,35-76} and provides summary information on each instrument. Table 1 also displays correlations between these spirituality measures and health outcomes from cross-sectional studies (concurrent validity), as well as data available from prospective studies that investigated the predictive value of these instruments on health outcomes (predictive validity). Additional information on each instrument can be found in an online Appendix

Table (Online Appendix 2). Particular observations about the instruments are provided below.

Validation Population and Psychometric Properties The instrument validated in the largest and most diverse population is the *World Health Organization's Quality Of Life Instrument—WHOQOL—Spirituality, Religion and Personal Beliefs*⁶⁶ (WHOQOL-SRPB). It was validated using 5,087 participants in 18 countries around the world. The *Multidimensional Measurement of Religiousness/Spirituality*⁴⁰⁻⁴² was also validated in a large sample, but only composed of participants in the United States (N=1,445). When considering specific validation in medical patients, the Functional Assessment of Chronic Illness Therapy-spiritual well being (FACIT-Sp)^{7,65} was validated in the largest sample (N=1,617 patients) comprised of individuals with cancer (83%) or HIV/AIDS (17%).

The clinical populations most frequently studied for instrument validation were those with severe life-threatening or chronic diseases (e.g., cancer, HIV/AIDS, terminally ill; 34%). Six instruments were initially validated only in student samples^{22,28,45,60,64,72}, but were further used in clinical research with health outcomes, either in the same initial student population⁷² or in later studies with patients (see Table 1). Overall, only three instruments had been validated in older persons,^{36,67-69} and only one instrument was validated with nursing home residents.^{54,55}

In general, data on psychometric properties of the instruments were incomplete, but some important trends did emerge. First, criterion-related validity with religiousness measures or with other spirituality measures was frequently reported (54%). As no "gold standard" measure of spirituality exists, the instruments most frequently used to establish such validity were measures of religiosity (e.g., Hoge Intrinsic Religious Motivation Scale, Duke Religion Index). However, five studies^{28,42,43,60,69} also used the Spiritual Well-being Scale²² as a measure of criterion validity. Second, data on concurrent validity were reported for 48% of the instruments. Domains most frequently chosen to assess concurrent validity were quality of life, psychological states, life satisfaction, or depression. Third, data on longitudinal predictive validity were scarce as most studies had cross-sectional designs and very few instruments have been used in prospective studies. Nevertheless, we found prospective data on predictive validity from other studies retrieved from the systematic search for six instruments^{7,22,38,45,49,60}. Results show that measures of spirituality might be predictive of: (1) reduced drug use in drug treatment patients (*Spiritual Well-Being Scale*²², *Spiritual Transcendence Scale*⁴⁵); (2) better quality of life and decline of depressive symptoms in cancer survivors (FACIT-Sp⁷); and (3) reduced long-term care utilization in older patients (*Daily Spiritual Experience Scale*³⁸). Finally, little information regarding sensitivity to change was found in prospective studies⁷⁷⁻⁸¹ that mostly used the *Spiritual Well-being Scale*²² and the FACIT-Sp⁷ scales. Results are essentially inconclusive as most of these studies do not report any significant change in spirituality measures, despite significant changes in measures of quality of life.

Quality scores assessing the comprehensiveness of the instrument development and validation process revealed that

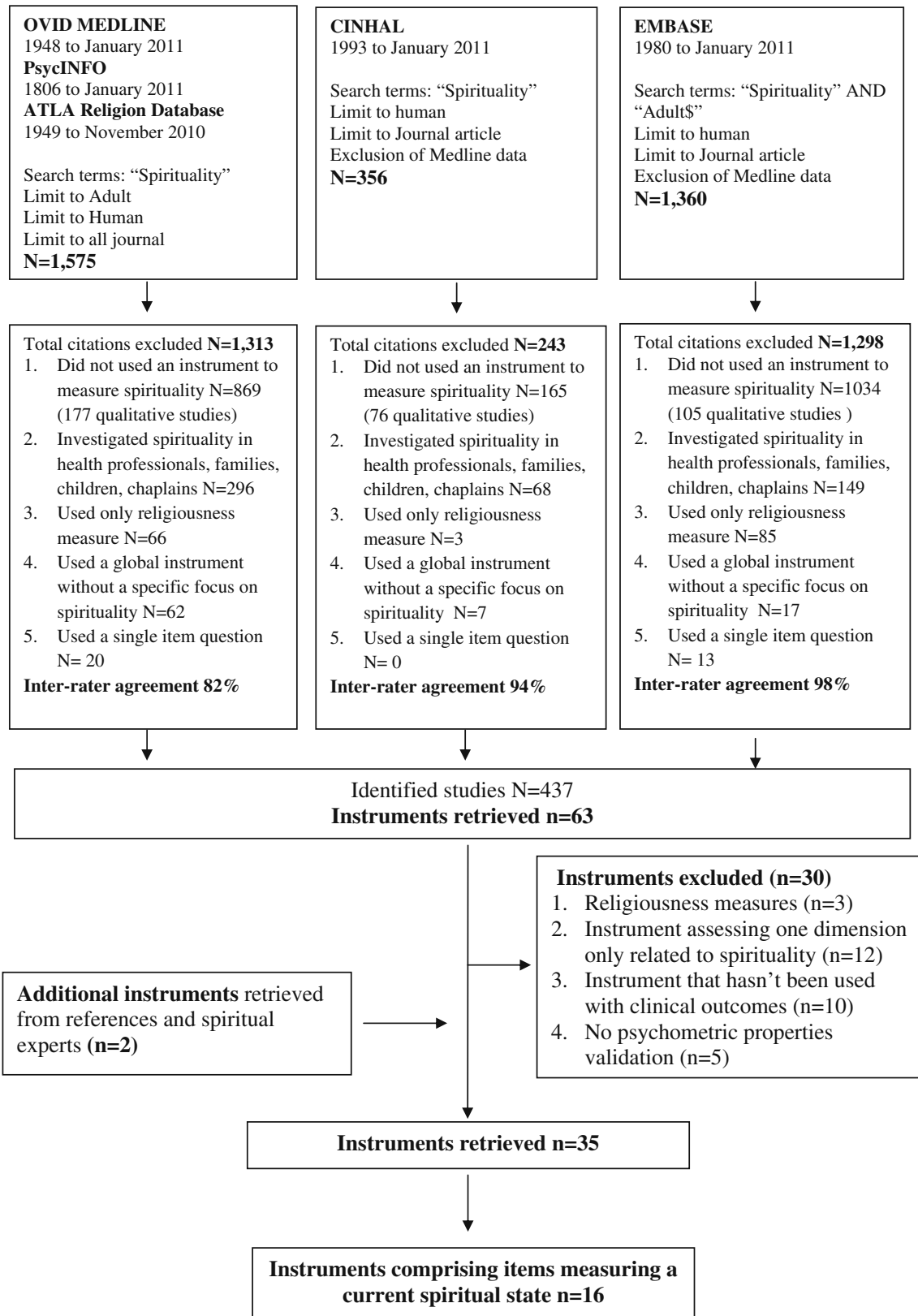


Figure 2. Search strategy: Flow chart describing literature search in Ovid Medline, Ovid PsycINFO, Ovid CINHAL, Ovid ATLA Religion databases and EMBASE.

most instruments had good scores, but only three had a perfect score of 6 out of 6 (i.e., *The Ironson-Woods Spirituality/Religiousness Index*⁶¹, *The Spiritual Well-Being Scale*²², and *The*

*Spirituality Index of Well-Being*⁶⁸). The most frequent validation weakness was the lack of a test-retest measure, which was reported in less than half of the instruments (13/35).

Table 1. Summary Table on Instruments to Assess Spirituality

Authors' key articles	Instrument name, number of items	Measures and quality*	Validation population: predictive validity and correlation of measure of spirituality with health outcomes
General Spirituality measures			
Reed, 1986 ³⁷	The Spiritual Perspective Scale 10 items, 6-point Likert scale	C, B 4	N=300 terminally ill hospitalized cancer patients (mean age=61.1±14.6 years), non-terminally ill hospitalized patients (mean age = 60.2±13.6 years) and healthy persons (mean age = 60.5±10.8 years) Cronbach's $\alpha=0.93$ to 0.95 Correlation with well-being in terminally ill cancer patients (Reed P, 1986); Quality of life in African American breast cancer survivors (Leak A, 2008); Anxiety and cardiovascular risk among older Hispanic women (Etnyre A, 2006; Sethness R, 2005)
Underwood, 2002 ³⁸	The Daily Spiritual Experience Scale (DSES) 16 items, 6-point Likert scale	C, A 5	N=1,845; 233 women from Study of Women Across the Nation (mean age=46.8±2.7 years), 45 patients with arthritis pain (mean age not available), 122 individuals from the University of Chicago (27.7±13.4 years), 1,445 individuals from a random representative sample of the US population (mean age =45.6±17.1 years) Cronbach's $\alpha=0.94$ Predictive of less heavy drinking in treatment-seeking patients (Robinson EA, 2007). Predictive of long-term care use in older African Americans and women (Koenig H, 2004). No prediction of clinical outcomes in patients recovering from an acute myocardial infarction (Blumenthal J, 2007); Correlation with anxiety, depression, alcohol consumption, quality of life (Underwood, 2002); Depressive symptoms in US sample (Mofidi M, 2006); Physical and mental health in a chronic pain population (Rippentrop EA, 2005)
Howden, 1992 ³⁹	Spirituality Assessment Scale 28 items, 5-point Likert scale	C, A 3	N=149 adults living in the community; age ranging from 40 to 60 years Cronbach's $\alpha=0.91$ Correlation with psychological well-being in older adults following spousal loss (Fry PS, 2001); Vision rehabilitation goals and adaptation to vision loss in middle aged and older adults (Brennan M, 2008; Brennan M, 2002); Suicidal behavior in African American women and men (Kaslow N, 2004)
Fetzer Institute National Institute on Aging, 1999 ⁴⁰ Idler, 2003 ⁴¹ Stewart, 2006 ⁴²	The Multidimensional Measure of Religiousness/Spirituality (MMRS) 88 items The Brief Multidimensional Measure of Religiousness/Spirituality 38 items	C, B, A 5	N=1,445, nationally representative sample ⁴¹ ; mean age=46.5 years Cronbach's $\alpha=0.54$ to 0.91 N=515; 355 students and 160 patients receiving treatment for alcoholism ⁴² ; mean age patients=38 years Cronbach's $\alpha=0.56$ to 0.95 Correlation with physical and mental health in individuals with chronic disabilities (Johnstone B, 2009); Blood pressure and cortisol stress response (Tartaro J, 2005); Physical health and mental health in chronic pain population (Rippentrop EA, 2005); Preference and use of technology and attitude towards death (Murphy PL, 2000)
Hatch, 1998 ⁴³	The Spiritual Involvement and Beliefs Scale (SIBS) 26 items, 5-point Likert scale	C, B 5	N=88; 50 patients from rural family practice and 33 family practice professionals; mean age=49.7±17.7 years Cronbach's $\alpha=0.92$ Correlation with hopelessness in patients with advanced cancer (Mystakidou K, 2008); Purpose in life in HIV-positive persons (Litwinczuk KM, 2007)
Kass, 1991 ⁴⁴	The Index of Core Spiritual experience INSPIRIT 7 items, 4-point Likert scale	C, B, A 5	N=88 adults outpatients at a behavioral medicine program (relaxation for stress-related components of illness) Cronbach's $\alpha=0.90$ Correlation with overall health (McBride JL, 1998); Substance abuse treatment outcomes (Heinz A, 2007)
Piedmont, 1999 ⁴⁵	The Spiritual Transcendence Scale 24 items, 5-point likert scale	C, A 5	N=356 students; mean age= 19.7±4.6 years Cronbach's $\alpha=0.85$ Predictive of treatment outcome from an outpatient substance abuse program (Piedmont R, 2004) Correlation with positive health perception in people with rheumatoid arthritis (Bartlett S, 2003)

Table 1. (continued)

Authors' key articles	Instrument name, number of items	Measures and quality*	Validation population: predictive validity and correlation of measure of spirituality with health outcomes†
Veach, 1992 ⁴⁶ Korinek, 2004 ⁴⁷	The Spiritual Health Inventory (SHI) 28 items, 5-point Likert scale	C, A 3	N=243; 93 male felony offenders in a residential treatment center; mean age=32 years (range 18-47) and 150 patients in a 6-week outpatient substance abuse treatment program, mean age=38 years (range 17-67) Cronbach's $\alpha=0.77$ Correlation with age and physical well-being in oncology patients (Highfield M, 1992)
King, 1995 ⁴⁸ King, 2001 ⁴⁹	The Royal Free Interview for Religious and Spiritual Beliefs Interview based 20 items (15 questions are rated on a visual analogue scale)	C, B, A 4	N=305; 153 health professionals, mean age=35±11.4 years; 123 general practice attenders not acutely ill, mean age=42±17.3 years; 29 religious persons, mean age=46±12.7 years ⁴⁸ Cronbach's α from 0.60 to 0.81 N=287; 102 health professionals (mean age=40.1±14.7 years), 173 community-dwelling persons (mean age=38.8±15.8 years), 22 fundamentalist Christian church members (mean age=54.8±12.7 years) ⁴⁹ Cronbach's $\alpha=0.74$ to 0.89
Delaney C, 2005 ⁵⁰	The Royal Free Interview for Religious and Spiritual Beliefs Self-report 18 items	C, B, A 4	Predictive of outcome of bereavement (Walsh K, 2002) Correlation with psychological well-being in frail older adult (Kirby S, 2004)
Ostermann, 2004 ⁵¹ Bussing, 2005 ⁵² Bussing, 2005 ⁵³	The Spirituality Scale 23 items, 6-point Likert scale SpREUK (Erfassung der Spirituellen und Religiösen Einstellung und des Umgangs mit Krankheit) 29 items, 5-point Likert scale SpREUK-P 25 items	C, B 3	N=226 patients with chronic illness (inpatients, outpatients and from community settings); mean age=64.0±18.8 years Cronbach's $\alpha=0.94$ N=129 in and out patients with acute or chronic diseases; ⁷² mean age=54±14.3 years Cronbach's $\alpha=0.62$ to 0.89 N=257 inpatients with acute or chronic diseases; ⁵² mean age=53.3±13.4 years Cronbach's $\alpha=0.90$ to 0.95 N=354 inpatients with chronic diseases and healthy controls ⁵³ ; mean age=49.0±12.5 years Cronbach's $\alpha=0.85$ Correlation with coping with illness in cancer patients (Bussing A, 2005)
McSherry, 2002 ⁵⁴ Wallace, 2007 ⁵⁵	Spirituality and Spiritual Care Rating Scale 17 items, 5-point Likert scale	C 3	N=549 ward-based nurses ⁵⁴ ; (mean age not available) Cronbach's $\alpha=0.64$ Nursing home older residents (>65 years) ⁵⁵ ; age range: 65-100 years Cronbach's $\alpha=0.73$
LeBron McBride J, 1998 ⁵⁶	The Brief Pictorial Instruments for Assessing Spirituality 3 questions, 5-point scale	B, A 5	N=442 patients (random sample in a family practice residency program), age ranging from 41 to 50 years Correlation with overall health, physical pain, and feelings of anxiety (McBride L, 1998)
Rowan, 2006 ⁵⁷	The Higher Power Relationship Scale 17 items, 5-point Likert scale	C 4	N=350 outpatient and inpatient treated for chemically dependant behaviors (39% alcohol, 26% cocaine); mean age=37.8 years (range: 18 to 65) Cronbach's $\alpha=0.96$
Goldfarb, 1996 ⁵⁸ Galanter, 2006 ⁵⁹	Orientation toward religion and spirituality index 12 items, 5-point Likert scale Spirituality Self-rating Scale	C, B, A 3 2	N=101 inpatients with both diagnosis of substance abuse and psychiatric disorder (mean age not available) ⁵⁸ N=119 Students (mean age=23.5±2.0 years) Cronbach's α (patients)=0.86 Cronbach's α (students)=0.86

Table 1. (continued)

Authors' key articles	Instrument name, number of items	Measures and quality*	Validation population: predictive validity and correlation of measure of spirituality with health outcomes†
	6 items, 5-point Likert scale		N=101 psychiatric inpatients, N=110 methadone clinic patients and N=52 methadone anonymous attendees ⁵⁹ Cronbach's α from 0.82 to 0.88
MacDonald D, 2000 ²⁸	The Expressions of Spirituality Inventory 98 items, 5-point Likert scale	C, B, A 4	N=938 students; mean age=20.9 \pm 4.3 years Cronbach's α =0.85 to 0.97 Correlation with well-being in breast cancer patients (Puig A, 2006)
Genia V, 1997 ⁶⁰	The Spiritual Experience Index 23 items, 6-point Likert scale	C, 4	N=211 students, residential life personnel, religious professionals Cronbach's α =0.89 No prediction of alcohol treatment retention and outcomes among African-American patients (Pringle J, 2007)
Ironson, 2002 ⁶¹	The Ironson-Woods Spirituality/Religiosity Index (short form) 22 items, 5-point Likert Scale	C, B 6	N=279 HIV-positive patients (mean age=40.0 \pm 7.7 years) and long-term survivors of AIDS (mean age =37.7 \pm 8.5 years) Cronbach's α =0.96 Correlation with perceived stress; hopelessness; optimism; anxiety; social support (Ironson, 2002); Mental health in people living with HIV (Lockenhoff CE, 2009)
King, 2006 ⁶²	The Beliefs and Values Scale 20 items, 5-point Likert Scale	C, B, A 5	N=372 patients with advanced cancer receiving palliative care and people without cancer from community; age \geq 18 years Cronbach's α =0.94
Christo, 1995 ³⁵	The Spiritual Beliefs Questionnaire 7 items, 5-point Likert scale	C, B, A 3	N=101 polydrugs users presenting for abstinence based treatment; mean age=30.5 \pm 5.9 years Cronbach's α =0.82
Seidlitz, 2002 ⁶³	The Spiritual Transcendence Index 8 items, 6-point Likert scale	C, A 5	N=348 (116 persons from community, 90 persons from clergy or religious leaders attending a regional Presbyterian church, 142 students from theological seminary); mean age=56.5 \pm 17.8 years Cronbach's α =0.97 Correlation with quality of life (Seidlitz, 2002)
Hodge, 2003 ⁶⁴	The Intrinsic Spirituality Scale 6 items, scale from 0 to 10	C 5	N=172 university students from a Baptist-affiliated university; Mean age=19.26 (SD=1.35) Cronbach's α =0.96 Correlation with alcohol use; frequency of binge drinking; tobacco use, secure attachment (Hodge, 2003); Depression, resilience, satisfaction with life in patients with spinal cord injury (White B, 2010)
Spiritual well-being measures			
Brady, 2002 ⁷	The Functional Assessment of Chronic Illness Therapy - Spiritual Well-Being Scale (FACT-Sp)	C, A 5	N=1,617 (83% with cancer, 17% with HIV/AIDS) ⁶⁵ ; mean age=54.6 years (range 18-90 years) Cronbach's α =0.87
Peterman, 2002 ⁶⁵	12 items, 5-point Likert scale		N=131 (patients beginning chemotherapy for any solid tumor or hematological malignancy); ⁷ mean age=56 years (range 20-82 years) Cronbach's α =0.86 Predictive of quality of life in survivors of breast cancer (Purnell J, 2009); adjustment to cancer, decline of depressive symptoms and increase vitality in cancer survivors (Vanez B, 2009) Correlation with quality of life measure and with subjective mood states (Brady, 2002); Depression in cancer and AIDS patients (Nelson CJ, 2002; Nelson CJ, 2009); Depression, hopelessness and desire of death in terminally-ill cancer patients (McClain C, 2003); Hopelessness in cancer patients (Whitford, 2008); Depression in patients with HIV/AIDS (Yi MS, 2006); Sleep quality, mental and physical health status in HIV-infected patients (Phillips KD, 2006); Physical and mental health in prostate cancer patients (Krupski T, 2006)

Table 1. (continued)

Authors' key articles	Instrument name, number of items	Measures and quality*	Validation population: predictive validity and correlation of measure of spirituality with health outcomes†
Ellison, 1983 ²²	The Spiritual Well-Being Scale (SWBS) 20 items, 7-point Likert scale	C, A 6	N=100 students; mean age (not available) Cronbach's $\alpha=0.89$ Predictive of drug use in drug treatment patients (Conner BT, 2009); Alcohol abstinence at 1 year (Piderman K, 2008); Correlation with depression in women living with HIV/AIDS (Dahlmida SG, 2009); Anxiety and depression (McCoubrie RC, 2006); Quality of life, social support, coping strategies in persons living with HIV (Tuck I, 2001); Death distress in patients with life-threatening conditions (Chubbnaill J, 2002)
WHOGOL SRPB Group, 2006 ⁶⁶	WHOGOL SRPB (spirituality, religion and personal beliefs) 32 items, 5-point Likert scale	C, A 4	N=5,087 community participants in 18 countries; mean age=41.3±15.3 years Cronbach's $\alpha=0.91$ Correlation with quality of life in patients with chronic neurological disorders (Giovagnoli AR, 2009) and with focal epilepsy (Giovagnoli AR, 2006)
Hungelmann, 1998 ⁶⁷	JAREL spiritual well-being scale 21 items, 6-point likert scale	C, B, A 4	N=294; 65 years or older, healthy to terminally ill, from nursing home, acute care facilities, home/apartments, senior centers; mean age=73 ± 1 years Cronbach's $\alpha=0.85$ Correlation with quality of life at the end of life (Prince-Paul M, 2008)
Daaleman, 2002 ⁶⁸ Daaleman, 2004 ⁶⁹	The Spirituality Index of Well-Being (SIWB) 12 items, 5-point Likert scale	C, A 6	N=277 community-dwelling geriatric outpatients; ⁶⁸ mean age=74 years (range 65–90) Cronbach's $\alpha=0.87$ N=509 adults outpatients from family practice ⁶⁹ ; mean age=46.8±17.1 years Cronbach's $\alpha=0.91$ Correlation with quality of life, health status, depression, fear of death (Daaleman, 2002); General well-being; depression (Daaleman, 2004)
Spiritual Coping measures Holland, 1998 ⁷⁰	The System of Beliefs Inventory (SBI-15) 15 items, 4-point Likert scale	C, B, A 5	N=301, healthy individuals, individuals within religious communities, psychiatric facility professionals; mean age=40 years (range: 18–82 years) Cronbach's $\alpha=0.93$ Correlation with quality of life in ovarian cancer patients (Canada AL, 2006); Desire for hastened death in amyotrophic lateral sclerosis patients (Rabkin JG, 2000)
Mohr, 2007 ⁷¹	A Semi-Structured Clinical Interview For Assessment of Spirituality and Religious Coping for Use in Psychiatric Research Interview based 20 items, Visual analogue scale	C, B 3	N=115 psychiatric outpatients; mean age=39±10 years Interrater reliability (Kendall's rank correlations from 0.64 to 0.78) Correlation with quality of life and self-esteem in chronic schizophrenia patients (Mohr S, 2010)
Nelson-Becker, 2005 ³⁶	The Spiritual Strategies Scale 18 items, 5-point Likert scale	C, B, A 4	N=79 senior from residential facilities; median age=78 years (range 58–92) Cronbach's $\alpha=0.86$ Correlation with life satisfaction and depression (Nelson-Becker H, 2005)
Ai, 2005 ⁷²	The Spiritual Support Scale 12 items, 4-point Likert scale	C, A 5	N=453 students, 3 months after September 11, 2001 terrorist attack; mean age=29.06±9.24 years Cronbach's $\alpha=0.97$
Spiritual Needs measures Herrmann, 2006 ⁷³	Spiritual Needs Inventory 17 items	C, B, A 4	N=100 inpatients and outpatients near end of life; mean age=67 years (range 21–99 years) Cronbach's $\alpha=0.85$
Taylor, 2006 ⁷⁴	The spiritual interests related to illness tool (SPIRIT) 42 items, 5-point Likert scale	C, B, A 5	N=156 adults treated for cancer; mean age=63.6 ± 11.6 years Cronbach's $\alpha=0.95$

Table 1. (continued)

Authors' key articles	Instrument name, number of items	Measures and quality*	Validation population: predictive validity and correlation of measure of spirituality with health outcome†
Yong, 2008 ⁷⁵	The Spiritual Needs scale 26 items, 5-point Likert scale	C, B, A 4	N=257 Korean patients treated for cancer Mean age=55.6 years Cronbach's $\alpha=0.92$
Büssing A, 2010 ⁷⁶	The Spiritual Needs Questionnaire 19 items, 4-point Likert scale	C, B, A 4	N=210 patients with chronic pain conditions (67%), cancer (28%), other chronic conditions (5%); mean age=54 ± 12 years Cronbach's $\alpha=0.93$

* C = Cognitive expression of spirituality, B = Behavioral expression of spirituality, A = Affective expression of spirituality; quality of instrument validation (score ranging from 0 to 6, higher score indicating more comprehensive validation process)

† Full references are available in Online Appendix 3

Table 2. Instruments Including Items Measuring a Current Spiritual State and Specific Domains Investigated by these Items

Instrument Name	Number of items specifically investigating a current spiritual state	Specific domain investigated
General Spirituality		
The Daily Spiritual Experience Scale ³⁸	2 of 16	Peacefulness Loving God
Spirituality Assessment Scale ³⁹	4 of 28	Sense of harmony Peacefulness Self-esteem Fulfillment Purpose/meaning
The Brief Multidimensional Measure of Religiousness / Spirituality ⁴⁰⁻⁴²	4 of 38	Peacefulness Loving God Punishment
The Spiritual Transcendence Scale ⁴⁵	2 of 24	Connectedness/ universality
The Spiritual Health Inventory ^{46,47}	6 of 28	Peacefulness Sense of harmony Identity Purpose/meaning Life satisfaction Punishment
The Royal Free Interview for Religious and Spiritual Beliefs ^{48,49}	1 of 20	
The Spirituality Scale ⁵⁰	2 of 23	Self-esteem Meaning Happiness
The Expressions of Spirituality Inventory ²⁸	6 of 98	Self-esteem Connectedness Well-being Fulfillment
The Spiritual Transcendence Index ⁶³	1 of 8	
Spiritual Well-being		
The Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being Scale ^{7,65}	7 of 12	Purpose/meaning Peacefulness Sense of harmony
The Spiritual Well-Being Scale ²²	8 of 20	Identity Purpose/meaning Life satisfaction Well-being
WHOQOL SRPB (spirituality, religion and personal beliefs) ⁶⁶	5 of 32	Purpose/meaning Hope Peacefulness Sense of harmony/ wholeness
JAREL spiritual well-being scale ⁶⁷	5 of 21	Spiritual well-being Purpose/meaning Life satisfaction Sense of harmony
The Spirituality Index of Well-Being ^{68,69}	6 of 12	Purpose/meaning Identity Self-esteem
Spiritual Coping		
Spiritual Needs		
Spiritual Needs Inventory ⁷³	17 of 17	Outlook Inspiration Spiritual activities Religion Community
The spiritual interests related to illness tool (sPIRIT) ⁷⁴	10 of 42	Meaning/purpose in life Relationship with God Receiving/giving love Hope

Classification of Instruments to Assess Spirituality

Conceptual Classification This classification (see Table 1) is based on the construct of spirituality the instrument is intended to assess. Twenty-two instruments were classified as measures of general spirituality.^{20,37-64} These instruments

are usually multidimensional measures and have various purposes, such as measuring expressions of spirituality, spiritual beliefs, or spiritual experiences. Five instruments were classified as measures of spiritual well-being^{7,22,66-68}. Four instruments were considered as measures of spiritual coping or spiritual support.^{36,70-72} Finally, four instruments were categorized as measures of spiritual needs⁷³⁻⁷⁶.

Functional Classification This classification is based on the definition of three categories of items (i.e., cognitive, behavioral, and affective), according to the spiritual expressions these items intend to capture (see Table 1). Almost all instruments include items that investigate cognitive (34/35) and affective aspects of spirituality (26/35). Overall, 15 of the 35 instruments combined all three different functional dimensions (i.e., cognitive, behavioral, and affective).

Instruments Comprising Items Measuring a Current Spiritual State

Table 2 provides more detailed information on the 16 instruments that include items measuring a *current* spiritual state.

Overall, purpose and meaning in life were the spirituality domains most frequently examined. Nine instruments include questions inquiring about meaning or purpose in life (e.g., "To what extent do you feel meaning in life"). Other domains frequently investigated were life satisfaction (e.g., "I am satisfied with my life"), peacefulness (e.g., "To what extent do you have inner peace?"), and self-esteem (e.g., "I feel good about myself").

Only three instruments have at least half of their items focusing on current spiritual state. Two of these instruments have a spiritual well-being construct (i.e., the *FACIT-Sp*⁷ and the *Spirituality Index of Well-being*⁶⁸) and are intended to assess the patient's level of spiritual well-being. These two instruments underwent an extensive validation process (scoring 5 and 6, respectively, on the scale to assess validation comprehensiveness). One instrument has a spiritual needs construct (the *Spiritual Needs Inventory*⁷³). However, this instrument underwent a less accurate validation process (score = 4).

In conclusion, the *FACIT-Sp*⁷ and the *Spirituality Index of Well-being*⁶⁸ clearly emerged as the most well-validated instruments for the assessment of a patient's current spiritual state.

DISCUSSION

This systematic review identified 35 instruments used in clinical health research to assess spirituality. A unique contribution of this review is to offer a clear description of the constructs and aims of these instruments and to highlight the different aspects of spirituality these instruments are intended to capture. The typology of these instruments using two complementary classifications should help professionals interested in the field of spirituality and health in choosing the most appropriate instrument for their research or clinical purposes. Those interested should first define the type of concept of spirituality (e.g., spiritual well-being) they wish to assess and then choose the appropriate instrument regarding the type of spiritual expression (cognitive, behavioral, or affective expressions) assessed by the instrument (Table 1).

Another important contribution of this review is to identify instruments able to measure a patient's current spiritual state that could potentially determine the need for spiritual intervention⁸². Results show that only three instruments had at least half of their items focusing on the patient's current spiritual state. Among them, the *FACIT-Sp*⁷ and *The Spirituality Index of Well-being*⁶⁸ are considered the best candidates to assess the current spiritual state of patients. However, all these instruments focus on spiritual well-being, and none address the other end of the hypothesized spectrum of spiritual state (i.e., spiritual distress). Looking at spiritual state only from a "well-being" perspective may be problematic and limit the precision of the observation in individuals whose state belongs to the other end of the spectrum. It seems unlikely that the absence of spiritual well-being could merely be equivalent to a state of spiritual distress. Making this distinction is essential to determine more precisely those situations that could potentially require an intervention. Overall, these findings have important implications for the fields of spiritual assessment and interventions in clinical care settings.

This review also emphasizes the relatively limited data available on the psychometric properties of most instruments. First, assessment of test-retest reliability was limited. Second, when reported, criterion-related validity primarily used measures of religiousness as opposed to other measures of spirituality. Thus, relationships among instruments that share similar spirituality constructs were seldom reported, limiting the robustness of the instrument validation in many cases. Third, data on predictive validity were scarce. Finally, there were very few data on sensitivity to change, and retrieved results were essentially negative. However, the population enrolled in these studies had quite high levels of spiritual well-being at baseline, making it difficult to show any further improvement over time. This ceiling effect likely explains these negative results. These limitations should be addressed in future research in order to determine the level of change that would be considered meaningful and to accurately assess the effectiveness of interventions to improve a patient's spiritual state⁸².

Finally, from a wider perspective, this review illustrates the diversity of the spirituality constructs used to develop these instruments and the resulting heterogeneity in their intended aims.

This systematic review has some limitations. First, instruments initially developed and used for other purpose than to investigate the relationship between spirituality and health were excluded. The extensive literature search identified instruments originating from psychological and theological research that were not specifically designed for use in clinical studies with health outcomes. Even though these instruments were excluded from this review, it is likely that some could also be applied in a clinical setting. Second, criteria used to include instruments in this review could be criticized as spirituality remains a broad, complex, and multidimensional concept that lacks definitional consensus. The exclusion of instruments designed on those dimensions only loosely related to spirituality seems logical (i.e., hope, peace), but the exclusion of instruments measuring broad concepts such as purpose or meaning in life is debatable. However, among the instruments that were excluded, the specific goal was not to measure spirituality *per se*.

This study has also clear strengths. First, a systematic and structured search was performed that used several databases and was complemented with input from experts in the field. In addition, the proposed functional classification was validated based on the triple-abstraction process that was performed by blinded

reviewers, with very good agreement observed. Additional data from subsequent studies where these instruments have been used (e.g., data on concurrent and predictive validity) were systematically retrieved from the search. Finally, this review was not limited to English-language instruments, but also included some measures initially developed in French, German, and Korean.^{51,71,75}

In conclusion, this systematic review provides detailed information on instruments to assess the complex relationship between spirituality and health. Results demonstrate the relative scarcity of instruments specifically designed to measure a patient's current spiritual state. Most importantly, these results highlight the current absence of any instrument designed to measure poor spiritual well-being, such as spiritual distress. Finally, this study also identified several methodological gaps that should be addressed before implementing spiritual interventions into routine care. In particular, the ability of current instruments to monitor changes in spiritual state over time seems especially important to understand further if one wants to adequately document the effectiveness of spiritual interventions.

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